ORTHEAST DEALER ISSUE Pages 9-16

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WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

3 | Accepted as Controlled Circulation Publication at Minneapolis, Minn. | OCTOBER 1, 1956 | Subscription Rates: $5 for 1 year, $9 for 2 years | No. 40

asshoppers May avily Infest lorado in 1957

Survey Shows More Than Million Acres With High Numbers

T. COLLINS, COLO. — Recently pleted surveys point to a serious shopper problem in Colorado in 7. Surveyors noted some shifting grasshopper populations, but the l areas of infestations are larger n they were a year ago.

he survey, completed by techni- s of the U.S. Department of Agri- ure's pest control branch, show t 438,000 acres of Colorado crop- l were infested. Most of this in- tation is confined to eastern Colo- o, although isolated spots were re- ted on croplands in the San Juan in and Western Slope areas.

Rangeland infestation totaled 1,- 7,000 acres. Much of this total s in Baca and Las Animas coun- s outside of areas where control easures were used this year. In- stations also were found in Archu- a, Montezuma, Dolores and gan counties in addition to scat- red infestations in other areas of stern Colorado.

Gordon Mickle, extension entomolo- at Colorado A&M College, says survey serves only as an indica- of trouble next year. Much de- ds on the weather.

Extent of egg laying this fall ges on weather conditions during fall months. Weather also will be factor at hatching time next May June.

County agricultural agents have n provided with copies of the sur- , and farmers and ranchers in in- ted areas have been urged to set their plans for grasshopper control xt year.

ugar Beet Acreage creased for 1957

WASHINGTON—The U.S. Depart- ent of Agriculture has announced at the national acreage allotment r 1957-crop sugar beets has been t at 885,000 acres. This acreage s been allocated to states for dis- ibution as proportionate shares (in- vidual acreage allotments) to per- ons requesting acreages on or be- ore specified closing dates for ac- epting requests. These range from ct. 26, 1956, in northern California March 29, 1957, in southern Cali- rnia.

The national acreage allotment of 885,000 acres for 1957 compares with an allotment of 850,000 acres established for 1955 and for 1956. The increase reflects changes in quotas for beet sugar established by recent amendments to the Sugar Act.

Except for 500 acres set aside as

(Continued on page 20)

CAPITAL OBSERVERS STUDY 1957 AND SAY: . . .

Fertilizer Sales Increase Will Depend on Soil Bank Handling

By John Cipperly
Croplife Washington Correspondent

WASHINGTON, D.C.—Casting up the balance sheet on the probable effects of the soil bank on plant food sales for the coming year, informed opinion here now sees a potential swing between a tonnage decline of 2-3% to an increase of 5%. The ultimate result will hinge on the administrative techniques used by USDA soil bank officials in their handling of the conservation reserve aspects of the soil bank program.

Trade sources here tell Croplife that they have been appraising the outlook not only from official sources but also from the viewpoints of field representatives. But without formal experience on which to evaluate field opinions, officials here must work somewhat in the bare field of speculative judgment.

The swing noted above is not held in some official USDA quarters outside the sphere of the plant food industry. These sources contend that the sizeable cuts in field crop acreage, particularly cotton, wheat, corn and rice will meet the USDA soil bank goals and consequently, they say, fertilizer sales tonnages of recent years, based on larger acreages, cannot be maintained.

This opinion is fortified by the estimated success of the soil bank in the crop areas noted above. However, this opinion is founded on the assumption of maximum cooperation with the bank by the wheat producers. Actually, the first showing of producer cooperation for the 1957 wheat crop now has a sign-up of approximately 1.7 million acres through Sept. 14. This is the first of the series of weekly reports for this crop, and it indicates to insiders at USDA that the final tally will reveal the winter wheat crop farmers finally coming close to meeting the USDA goal—somewhere between 10-12 million acres for that part of the 1957 wheat crop.

Another influence which has not been fully estimated, is the possibility that many large wheat producers in the Pacific Northwest may decide to ignore the wheat acreage allotments and plant their maximum land facilities to wheat. They would pay the penalty under the law and market their entire crop at the free market price without regard for price support. Large West Coast producers have calculated the short term financial aspects of such a possibility and see in it a better profit margin, despite penalties, than adherence and cooperation with either soil bank or the acreage allotment controls.

In the Pacific Northwest, however, there appears to be a broad avenue of misunderstanding about the terms and provisions of the soil bank. Generally, the soil bank is designed to remove production of field crops from cultivation; specifically to cut back production of

(Continued on page 21)

Pest Control and Residues Are Spotlighted as State Agricultural Officers Meet

SAN FRANCISCO—The twin problems of pest eradication and the control of insecticide residues on produce for human consumption and grain products for animal feed were the subjects of a featured panel discussion at the 38th annual convention of the National Association of Commissioners, Secretaries, and Directors of Agriculture, meeting in San Francisco.

Representatives of the Federal and California state governments and of the agricultural chemical industry participated in a panel on pesticide regulation and research and expressed mutual aims and desires for cooperation.

Allen B. Lemmon, chief of the Bureau of Chemistry of the California Department of Agriculture, Sacramento, congratulated chemical manufacturers for their "excellent job" in developing new pesticides. "Through extensive research, sometimes on its own and sometimes in connection with experiment station programs" the industry "has developed proper pest control practices," he declared.

Dr. L. C. Glover, entomologist with Shell Chemical Corp., San Francisco, explained that it took from three to five years and between one and two million dollars to prepare a new pesticide for market, and that this investment certainly would not be made solely for the purpose of leaving harmful residues on produce.

The agricultural market is attractive, he said, because it is an expanding one. During 1954 alone the increase was over 200,000,000 dollars. And the loss to agriculture from all causes is as much as fifteen billion dollars annually. The chemical industry is anxious to help reduce this tremendous crop loss.

Mr. Glover explained that to bring a new pesticide to market, the Shell research staff must first test some 2,000 chemicals. All but 25 are eliminated and the survivors are field tested. Twenty more formulas are then presented and rejected, and of the handful remaining all but one or two are eliminated for other reasons. These one or two then undergo analytical tests.

Representing the USDA, John T. Coyne, assistant head of the pesticide regulation service, Washington, discussed the incongruity arising when a pesticide is accepted for registration under the Federal Insecticide, Fungicide, and Rodenticide

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Re-Mark Chemical Begins $100,000 Expansion Program

HOMESTEAD, FLA. — A $100,000 modernization program to increase fertilization production five-fold, has been announced by the Re-Mark Chemical Co. here. According to David Marks, president of the company, work will begin soon on the new construction which will include the installation of new equipment and the expansion of floor space.

The Re-Mark Company also purchased recently the R. W. Brown fertilizer plant at Goulds, Fla. The new subsidiary will be known as Hurricane Fertilizer Co. and R. W. Brown, its former owner, will remain as general plant manager, according to Mr. Marks.

Julian Wohl, vice president of Re-Mark, and former field representative for the company, has been named division manager of the Goulds plant.

Re-Mark Chemical Co. reports gross sales of $1 million a year, and has subsidiary plants in Belle Glade and South Broward County, and a sales outlet in Cuba.

Dr. Sylvan I. Cohen

JOINS OLIN MATHIESON — Dr. Sylvan I. Cohen has joined Olin Mathieson Chemical Corp. as an agricultural research specialist in the research and development department of the insecticides division at Port Jefferson, N.Y. He was formerly vice president for research of Gallowhur Chemical Corp., Ossining, N.Y. Dr. Cohen obtained his Ph.D. degree in plant pathology at Washington State College, Pullman, in 1942. Following World War II he was assistant research professor at the Rhode Island Experiment Station for two years. Much of his work has concerned the development of mercurial seed disinfectants and other new organic foliage fungicides. He holds patents on several compounds developed for use in this field.

Anco to Handle Sales Of Flint Steel Corp.'s Ammonia Storage Tanks

MEMPHIS, TENN. — In a recent joint statement by Charles B. Gannaway, Jr., executive vice president, Flint Steel Corp., and W. W. Wattman, vice president in charge of sales, Anco Manufacturing & Supply Co., it was announced that effective immediately, all sales of LPG and NH_3 storage tanks fabricated by the Flint Steel Corp. will be sold and invoiced by their affiliate company, the Anco Manufacturing & Supply Co. This change has been made to improve and streamline the sale and fabrication of this type equipment, the announcement said.

Effective with this change, all sales personnel in the Memphis division of Flint Steel are transferred to the sales department of Anco Manufacturing & Supply Co. B. A. Rolfes is the Memphis division sales manager, assisted by R. F. Albright and John Reaves. The Memphis sales office of Anco is located in the Memphis office of Flint Steel, 241 Industrial Ave., P. O. Box 3206.

Mr. Gannaway stated that it is the belief of management of both concerns that this new arrangement will better facilitate production and sales, as well as offer superior service to customers.

Dow Names G. D. Jones To New Research Post

MIDLAND, MICH. — Dr. Giffin D. Jones has assumed new responsibilities as director of the physical research laboratory of Dow Chemical Co., Dr. R. H. Boundy, vice president and director of research, has announced.

He succeeds Dr. W. C. Bauman who recently was named director of research for the company's chemicals department.

With the company for the past nine years, Dr. Jones was appointed assistant director last May, moving up from division leader to replace Dr. Turner Alfrey who became head of the Polymer Research Laboratory.

Author of a number of papers and credited with more than a dozen patents in the polymer field, Dr. Jones was an instructor in organic chemistry at the University of Iowa and a research chemist at the General Aniline and Film Corporation before joining Dow in 1947.

He received his B.S. degree in organic chemistry from the University of Wisconsin and his doctorate in that field from the University of Illinois in 1942.

Purdue Scientists Using Electronic Equipment To Study Soil Tests

LAFAYETTE, IND. — Soil scientists at Purdue University are now using electronic tabulating equipment to gain additional knowledge of the soils of Indiana.

Results of more than 80,000 soil samples tested at Purdue have been transposed into a form in which automatic tabulating and accounting machines can be used for correlations and summaries. Such equipment is necessary because of the great number of samples and the many different types of data used. In addition to chemical soil test results, field history information has been recorded.

Targets of this new type of research are the relationships between soil test levels and other soil characteristics such as topography, drainage, soil type, and parent mineral material. The frequency of occurrence of various acidity, available phosphorus and available potassium levels in different soil types and in different regions in Indiana can also be determined.

Roy Bronson and S. A. Barber, Purdue agronomists, feel this will prove a valuable guide for general fertilizer recommendations where actual soil test results are not available on which to base sound fertilizer usage and practices.

From results of tabulations of soil tests made at Purdue, the soil specialists expect to tell county agents and local agricultural consultants what percentage of the soils in their areas are deficient in phosphorus or potassium and to estimate the amount of fertilizer which should be used for that area.

Agronomists also will be able to more closely prescribe the fertilizer ratios which should be used in an area for various crops. By using the electronic equipment, the scientists will be able to compute from the soil test data and information which the farmer supplies, the amounts of nitrogen, phosphate and potash which have been recommended for various crops or various soil types for each county in Indiana.

The soil testing laboratory at Purdue went into operation in April 1951. Some 150,000 samples have been tested.

California Inspectors Have Busy Year

SACRAMENTO — California plant quarantine inspectors at border and port stations and interior points intercepted 33,162 lots of insects, 11,796 lots of diseases and 634 lots of pests last year, according to the California Department of Agriculture.

Inspectors examined a total of 4,119,720 automobiles, trucks and buses, 8,845 ships and 2,593 airplanes.

Among the more important pests taken were cotton boll weevil, citrus white fly, European corn borer, cherry fruit fly, apple maggot, walnut huskfly, Mediterranean fruit fly, oriental fruit fly, melon fly, bean butterfly, mango seed weevil, pink bollworm, bean pod borer, avocado seed weevil and rice stem borer.

Water Supplies in Texas Discussed at September Meeting

COLLEGE STATION, TEXAS — The importance of an adequate water supply to both agriculture and industry was emphasized at the second "Water for Texas" conference held here Sept. 17-19. Over 100 hydrologists and others interested in the state's water problems, were in attendance.

Gibb Gilchrist, head of the Texas A&M College System's water research and information center, told the group that Texas needs a single central operating agency to handle all matters of finance or control relating to its water problems. He added that special funds should be allocated to develop new water resources, and that a price should be put on water to prevent its being taken for granted. "It is too valuable a commodity to be wasted because it is free or cheap," he declared.

The basic water problem is one of management, he said, and it is for this reason that a central authority is regarded as a necessity.

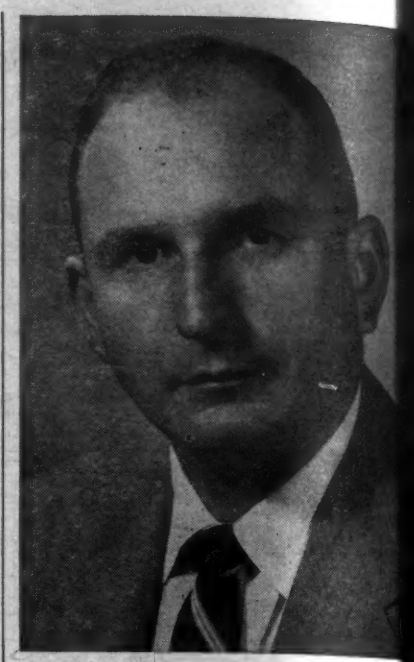
Mr. Gilchrist said the need for management is illustrated by a glance at the maximum runoff year, 1941, in which 103 million acre-feet were discharged, as opposed to 1954, when only 19 million acre-feet of runoff was recorded.

He suggested formation of an appointive board of three members to handle all water resource matters for the state, a state water engineer with full power to carry out the orders and policies of this commission, provision to retain the present board of water engineers until expiration of their terms of membership, and arrangement for consultation and advice with other agencies such as the soil conservation service, the health department, and the railroad commission in setting up policies for the central board.

In addition, Mr. Gilchrist's plan calls for division of the state into 25 watershed divisions with a district engineer in charge of each.

Wendell W. Hoover, Jr.

JOINS ASHCRAFT-WILKINSON — Wendell W. Hoover, Jr., has been named sales representative in the middle west, by Ashcraft-Wilkinson Co., according to an announcement by Warren C. Huff, district manager. Mr. Hoover is a native of West Virginia and a graduate of the University in that state. He was associated with the West Virginia extension service before his acceptance of the sales position with Ashcraft-Wilkinson. With headquarters in Columbus, Ohio, he will assist Mr. Huff in sales work in Ohio, Western Kentucky, Michigan, Indiana, Illinois and Wisconsin.



Robert F. White

JOINS SOUTHERN NITROGEN — Robert F. White has been appointed sales representative for Southern Nitrogen Co., Inc., the company has announced. He will operate in northern Georgia, northeast Alabama and eastern Tennessee. Mr. White is a 19[illegible] graduate of the University of Georgia and since that time has represented a numer of fertilizer firms in the general area. He has had close association with both fertilizer manufacturers and dealers in his territory for a number of years, and will make his home at Decatur, Ga.

California Chemical Employment Increases

SAN FRANCISCO — Chemical manufacturing employment in California jumped by another 3[illegible] wage and salary workers between June and July of this year to reach a new high of 38,100, according to estimates of the state Division of Labor Statistics and Research. The new level represents a gain of approximately 4% over the figure of the previous July when manufacturing employment in the industry stood at 36,700.

The relatively sharp employment rise followed a record set during the first half of the year. The production worker segment of the industry increased average hourly earnings between the two Julys from $2.13 to $2.26, and average weekly earnings from $88.12 to $94.43.

Illinois Dean Plans Fall Trip to India

URBANA, ILL. — Dean Louis B. Howard of the University of Illinois college of agriculture will leave Oct. 7, for New Delhi, India, to review the progress of educational programs in Indian agricultural institutions that are being carried out under an ICA financed contract with the University of Illinois.

Dean Howard is making the study trip at the invitation of Dr. Frank W. Parker, chief agriculturist of ICA's technical cooperation mission in India, and the Indian ministry of agriculture officials. He expects to return to the campus soon after Thanksgiving.

The ICA-sponsored contract with the University of Illinois provides for technical agricultural assistance and cooperation with educational institutions in the north-central area of India. Three other state institutions—Ohio, Kansas and Tennessee—have similar contracts covering work with institutions in other areas, and the University of Missouri is negotiating a contract.

RETURN TO FOREST

BURLINGTON, VT. — Vermont Forest Service estimates that at least 10,000 acres in the state are returning to forests each year.

Upward Trend in Potash Production Is Confirmed in Government Report for '55

WASHINGTON, D.C.—Production of marketable potassium salts continued its upward trend in the U.S. in 1955, again reaching a new high, 7% above 1954, according to reports by producers to the Bureau of Mines, U.S. Dept. of the Interior. Both sales and apparent consumption of potassium salts increased 4% in 1955, compared with 1954, the report said. Stocks in producers' hands at the end of 1955 were 20% above the previous year's and totaled 630,962 short tons with a K_2O content of 373,195 tons.

(In an August report (Croplife, Aug. 27, page 1) the American Potash Institute reported the deliveries by the seven major American potash producers for the first six months and imports for the first five months of 1956, as showing an increase of 2% in salts and K_2O over the same period of 1955).

The Bureau of Mines report says that both imports to the U.S. and exports from this country of potash materials increased in 1955, 46% and 95% respectively. West Germany, East Germany, France, Spain and Chile, respectively, supplied 37, 25, 23, 6 and 6% of the total imports of potash. The major portion of exports (65%) was to countries in the Western Hemisphere, with 26% to Asia and 8% to New Zealand.

New Mexico, California and Utah continued to supply the major portion of domestic potash production, with New Mexico supplying 91%. The National Potash Co. was developing its mine in New Mexico during the year.

The report was prepared by E. Robert Ruhlman and Gertrude E. Tucker, under the supervision of W. F. Dietrich, chief, branch of ceramic and fertilizer materials, Div. of Minerals, Bureau of Mines, Washington, D.C.

TABLE 1

Salient Statistics of the Potash Industry in the United States, 1953-55

	1953	1954	1955
Production of potassium salts (marketable).....short tons....	3,266,429	3,322,395	3,505,505
Approximate equivalent K_2O....do.....	1,911,891	1,948,721	2,064,808
Sales of potassium salts by producers.....do.....	2,965,986	3,270,006	3,400,835
Approximate equivalent K_2O....do.....	1,731,607	1,918,157	2,003,578
Value at plant.....	$65,403,000	$71,819,000	$76,551,000
Average per ton.....	$22.05	$21.96	$22.51
Imports of potash materials...short tons....	250,557	225,230	329,389
Approximate equivalent K_2O....do.....	133,587	119,220	177,052
Value.....	$9,952,663	$8,387,265	$11,769,071
Exports of potash materials...short tons....	88,208	117,386	229,303
Approximate equivalent K_2O 1/do.....	49,109	66,476	130,226
Value.....	$3,936,415	$5,463,452	$9,202,965
Apparent consumption of potassium salts 2/.....short tons....	3,128,335	3,377,850	3,500,921
Approximate equivalent K_2O....do.....	1,816,085	1,970,901	2,050,404

1/ Estimate by Bureau of Mines.
2/ Quantity sold by producers, plus imports, minus exports.

TABLE 2

Potassium Salts Produced in the U.S., 1953-55, by Grades, in Short Tons

Grade	1953	1954	1955
Muriate of potash:			
60-62 percent K_2O minimum.....	1/ 2,926,398	1/ 3,033,185	1/ 3,195,935
48-50 percent K_2O minimum.....	81,801		
Manure salts.....	4,628		
Sulfate of potash and sulfate of potash-magnesia.....	253,602	289,210	309,570
Total.....	3,266,429	3,322,395	3,505,505

1/ Includes refined potash and some 93-96 percent KCl.

TABLE 3

World Production of Potash (Marketable, unless otherwise stated) in Equivalent K_2O, by Countries, 1946-50 (average) and 1951-55, in short tons

(Compiled by Helen L. Hunt)

Country 1/	1946-50 (average)	1951	1952	1953	1954	1955
North America: United States	1,101,537	1,420,323	1,665,113	1,911,891	1,948,721	2,064,808
Crude (including brines) 3/	1,205,037	1,546,756	1,841,118	2,098,736	2,170,969	2,340,052
South America: Chile.....	4/1,251	(5/)	(5/)	(5/)	(5/)	(5/)
Europe:						
France (Alsace).....	791,833	960,730	1,022,539	996,575	6/1,198,200	6/1,311,800
Crude 3/.....	883,548	1,088,941	1,162,750	1,135,657	1,361,734	1,490,764
Germany:						
East 6/.....	985,400	1,510,000	1,440,000	1,488,000	1,488,000	1,582,000
Crude 3/ 6/.....	1,134,200	1,740,000	1,670,000	1,720,000	1,720,000	1,820,000
West.....	585,887	1,211,439	1,445,128	1,459,309	1,783,394	1,870,848
Crude 3/.....	695,520	1,459,363	1,712,659	1,742,752	2,134,072	2,226,666
Spain.....	175,660	190,556	199,613	202,764	243,166	235,343
Asia:						
India.....	2,665	2,912	4,704	1,567	1,653	6/1,600
Israel.....	22,393	---	---	3,415	6/12,000	11,905
Japan.....	148	6/250	173	283	454	461
Africa: Eritrea.....	128	2,094	1,323	---	---	---
Oceania: Australia.....	774	37	26	---	---	---
World total (marketable) (estimate) 1/.....	3,800,000	5,600,000	6,100,000	6,400,000	7,000,000	7,500,000

1/ In addition to countries listed, China, Ethiopia, Italy, Korea, and U.S.S.R., are reported to produce potash salts, but statistics of production are not available; estimates by senior author of chapter included in totals.
2/ This table incorporates a number of revisions of data published in previous potassium salts chapters. Data do not add to totals shown due to rounding where estimated figures are included in the detail.
3/ To avoid duplication of figures, data on crude potash are not included in the total.
4/ Average for 1947-50.
5/ Data not available; estimate by author of chapter included in total.
6/ Estimate.

Massachusetts Farmers Convert 1,000 Acres to Grassland and Trees

AMHERST, MASS. — Farmers in Massachusetts' 15 soil conservation districts last year converted more than 1,000 acres of cropland to grass and trees, according to the state conservationist for Massachusetts, Dr. Arthur B. Beaumont, soil conservation service, Amherst.

Dr. Beaumont stated that this shift, which has taken place as part of the regular soil and water conservation program, has totaled more than 1,500 acres during 1954 and 1955.

"This is a significant measure of interest that farmers have in shifting their poorer acres to grass and trees—a move that will be given tremendous added stimulus by the conservation reserve of the soil bank," he said.

The National Conservation Reserve goal for 1956 is 4 million to 6 million acres; for 1957, 20 million acres. This state's goal is 6 thousand to 10 thousand acres in 1956; 35 thousand acres in 1957. Farmers will receive $13 per acre in annual payments for land placed in the conservation reserve.

Freeport to Mine Humble's Offshore Sulfur Deposit

NEW YORK—The first completely offshore sulfur mining operation in history will be undertaken by Freeport Sulphur Co. at a deposit discovered in the Gulf of Mexico by Humble Oil & Refining Company, it has been announced.

The deposit, located off Louisiana in 45 feet of water six miles from the nearest land, represents a "major new source of sulfur," according to a joint announcement by Hines H. Baker, president of Humble, and Langbourne M. Williams, president of Freeport.

Under a contract signed by the two companies, Freeport will design, install and operate a mining plant to produce sulphur by the Frasch hot water process. Construction is required to begin by the latter part of 1958 and is expected to take two years to complete.

"The deposit, known as Grand Isle—Block 18, was discovered by Humble in the course of offshore oil exploration," the announcement stated. "It ranks among the most important sulfur discoveries of recent years."

The sulfur was found approximateately 1,700 feet below the floor of the Gulf in the caprock of a salt dome, a geological formation commonly found in the Texas and Louisiana Gulf coastal area.

"Grand Isle will be the first sulfur mining operation to be conducted in the open waters of the Gulf of Mexico," the announcement continued. "It will be a new and novel undertaking, but one for which Freeport is especially qualified because of its experience in mining sulphur at marshland and partially submerged locations."

Freeport has developed and successfully operated three sulphur mines in the coastal marshes. Two of the mining plants were erected on 75- to 95-foot piling, and the third was built on a barge, floated to the site, and sunk in place.

Soil Temperature is Taken in Kansas Tests

MANHATTAN, KANSAS — Temperature of the soil to depths of 8 feet is being recorded by a network of soil thermometers recently installed by Kansas Agricultural Experiment Station scientists.

Thermometers at Hays, Hutchinson and Colby will measure the temperature at 2, 4, 8 and 20 inches deep. Others at Manhattan, Mound Valley, and Garden City are at 2, 4, 8, 20, 48, 82, and 96 inches deep.

Though "climate" is usually thought of as applying only to the air above ground, Kansas State College scientists are studying "soil climate," which is quite different from "air climate."

L. D. Bark, meteorologist, explained that one-third of plants is below the surface and exposed to soil temperature, which is one of the elements involved in plant production. Both the processes that supply nutrients to plants and processes that influence growth are affected.

Dr. Starostka Joins Davison Research Team

BALTIMORE, MD. — R. W. Starostka has joined the department of agricultural chemical research of the Davison Chemical Co., division of W. R. Grace & Co., it has been announced.

During the past six years he was soil scientist with the fertilizer and agricultural lime section, U.S. Department of Agriculture, Beltsville, Maryland. Dr. Starostka attended the University of Nebraska, Purdue University, and the University of Wisconsin, obtaining a Ph.D. from the latter. During World War II he served as a field artillery battery commander and batallion officer in the Pacific.

WITCO APPOINTMENT MADE

CHICAGO — Witco Chemical Co. has announced the appointment of Cameron J. Duff to its sales force. Mr. Duff, headquartering in the Chicago office, will handle the complete line of the company's chemical division. He is a graduate of the University of Denver and has had broad experience in the chemical field.

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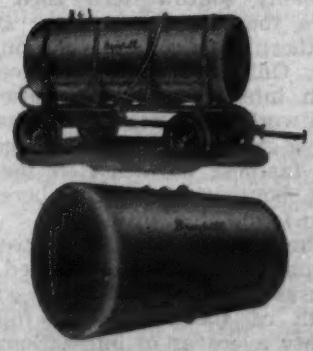

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INSECT AND PLANT DISEASE NOTES

Insect Losses Down For 1956 in Arizona

PHOENIX, ARIZ.—The cotton insect populations, especially Lygus, cotton leaf perforators, some boll worms and stink bugs, have caused considerable injury from time to time. Many growers have received injury from Lygus that could have been controlled if applications of inseticides had been applied before the counts became too high. Some of these insects will continue to cause some injury to crops and some farmers may wish to control them.

As a whole, the insect losses are down for 1956 due to reduced cotton boll worm infestations. Some losses have been caused by presence of thrips early in the season.—J. N. Roney.

Eradication of White Fringed Beetle Progresses

TRENTON, N.J.—New Jersey has made considerable progress in its efforts to exterminate the white-fringed beetle from the State, reports Frank A. Soraci, director of the division of plant industry, State Department of Agriculture.

Some 175 acres near Vineland were sprayed again this spring and during July and August six inspectors and a supervisor scouted for larvae, applying control measures where indicated. Less than 100 white-fringed beetles, all either dead or dying, were found, said Soraci, and there is every reason to believe the pest will be completely removed from New Jersey before very long. There have been no finds outside of the original infested area near Vineland.

An infestation of white-fringed beetles was found in northeastern Vineland in November, 1954, the only time it had been seen north of North Carolina. Beginning in the spring of 1955 heavy dosages of insecticide were applied to some 350 acres and the Vineland and South Jersey area was scouted intensively. Inspections have been made over the remainder of the State but no further infestations were found.

First discovered in this country about 20 years ago, the white-fringed beetle has at least as great a potential for damage as the Japanese beetle. In the larval stage the insect feeds on the roots of many species of plants while the adult feeds on the foliage. The beetles attack some 350 host plants.

Aphids and Corn Borers High in Kansas Count

MANHATTAN, KANSAS — Light to heavy populations of spotted alfalfa aphids were found in alfalfa fields surveyed in Wabaunsee, Shawnee, Douglas, Johnson, Miami, Franklin, Osage, and Riley counties, east central Kansas. Counts ranged from 15 to over 400 per sweep in most fields; however, no honey-dew was observed in the heavier infested fields. Aphid populations continue to increase on small seedling plants in the Kansas River Valley. Ladybeetle populations were extremely low in all of the aphid-infested fields. Counts never exceeded 5 adults per sweep.

Corn borer larvae (Zeadiatrea sp.), probably southwestern corn borer, were found at one survey stop in southern Douglas and Johnson counties. Only one larva was found in each infested field and these were still working in portions of the stalk above ground. These two records are the farthest northeast in the state that southwestern corn borer has been found this year.

The fall abundance survey for European corn borer continued in the Kansas River Valley in counties south of the river. The following county averages of infestations were found: Wabaunsee 9% with 13 borers/100 stalks, Shawnee 27%—54 borers/100 stalks, Miami 9% with 11 borers/100 stalks, Johnson 19%—48 borers/100 stalks, Douglas 28% with 37 borers/100 stalks, and Franklin 8% with 4 borers/100 stalks.—Dave Matthew.

Kentucky in All-Out War Against Mosquitoes

FRANKFORT, KY.—The state conservation department is conducting a study to determine the cause of mosquito infestations in streams in a number of counties in western Kentucky. The survey is being conducted jointly by the departments of conservation, economic development, agriculture and health.

Representatives of these agencies have expressed hope that the study will reveal a permanent solution to the mosquito problem in a number of counties. These include Hopkins, Muhlenberg, Webster, Union, Christian, and McLean.

Previous attempts to eradicate the pests have been less than successful, despite the fact that stagnant ponds and streams have been sprayed. During 1956, the department of agriculture was allotted $60,000 for the control of mosquitoes.

"Too Many" Peach Borers Reported in S. Carolina

CLEMSON, S.C.—During the past few years, the peach tree borer population and the resulting damage have been too high in the commercial peach orchards in this state, according to Roy J. Ferree, leader, Clemson horticulture extension work. He says this condition has resulted from either warm winters or from improper timing or improper methods of applying borer control treatments.

Mr. Ferree cautions growers to apply the recommended treatments at the proper time, not to dig soil away from tree trunks in making applications, and not to apply the material used below the point where borers entered the trees. Chemicals recommended for soil treatment for borer control in the fall are paradichlorobenzene, and ethylene dichloride, he states. The PDB should be applied in the Piedmont section from October 1-10 and in the central part of the state between October 8-18. The ethylene dichloride should be applied in the Piedmont October 7-20 and in the central part of the state October 12-25.

Mr. Ferree suggests that growers who applied sprays during the summer for borer control should examine their trees about October 1-10 to determine the effectiveness of the spray treatment. If very many borers are found in these trees, PDB or ethylene dichloride should be applied this fall.

Pesticide Formulators Plan N. Carolina Meeting

COLUMBIA, S.C.—The Carolinas-Virginia Pesticide Formulators Assn. will meet Oct. 8-10 at Holly Inn, Pinehurst, N.C., W. P. Crown of Columbia, S.C., president of the group, has announced.

Registration, directors' meeting, committee meetings, and a reception are scheduled for Oct. 8.

The agenda for Tuesday, Oct. 9 has been announced as follows: "Bug Problems of the Future" by Dr. Clyde F. Smith; an address by Dr. J. H. Cochran; a film feature, "The Rival World"; and a business meeting for election of officers, at the morning session.

Ladies will be entertained at a bridge luncheon.

Afternoon golf matches will be followed by a banquet, with U.S. Rep. Harold D. Cooley (D., N.C.) speaking on "The Effect of the Soil Bank on the Agricultural Chemical Industry."

Wednesday's program includes "New Developments in Herbicides" by Dr. George Ferguson, president, Geigy Agricultural Chemical Co., New York, an industry-wide meeting, and presentation of new officers before adjournment at noon.

Aerial Spray Applications During Summer Nearly Eradicate New Jersey Moths

TRENTON, N.J. — Practically no gypsy moth infestations have been found along the northern New Jersey border since the aerial spray applications were completed in June, revealed Frank A. Soraci, director of the division of plant industry, State Department of Agriculture.

The scouting program conducted since has indicated that the aerial spray of the woodland along the northern corridor was most successful, Soraci stated. However, it also indicated that there are infestations in New Jersey forests as far south as Morris County, probably because of recently established and previously unknown outbreaks in parts of Pennsylvania and New York.

It now appears that more than 100,000 acres of forest land in the State, south of the area sprayed in 1956, will need treatment next spring, he said. "Unless there are careful, large scale and spot sprayings followed by trapping and 'mopping up' operations, the hardwood forests are threatened with devastation by this pest. Of course the effectiveness of the control and eradication effort in adjacent states also will be a factor."

During July, August and early September, inspectors set out 2,000 traps in Sussex, Passaic, Bergen, Warren, Morris and Essex counties which they checked at regular intervals. Moths were picked up at 28 locations to the south and west of the area previously known to be infested. The program now calls for the treatment of about 2,000 acres around each of these locations plus complete coverage of several areas in Sussex and Warren counties.

Similar cleanup work around infestations found in northeastern Pennsylvania and southern New York State is also anticipated, advancing the program toward its objective of complete eradication of the pest from the forests.

The gypsy moth is the most serious enemy of New Jersey woodland and is capable of denuding forests and ruining timber as well as recreational and water conserving values of the forest. The infiltration of moths across the State line was discovered during the summer of 1955 through the regular trapping program and represented the first extension into New Jersey of the continuously infested area.

Dow Announces Plan for Employees to Buy Stock

MIDLAND, MICH.—The Dow Chemical Co. has announced a price of $60.00 per share on an issue of 150,000 shares of its common stock to be offered its employees and those of its subsidiaries and domestic associated companies.

Approximately 29,000 employees will be eligible to subscribe for stock under the 1956 employees' stock purchase plan, the eighth since 1948 offered on a payroll deduction basis.

As in previous plans, eligible employees may subscribe for stock up to 10% of their annual wage. Subscribers may cancel or reduce their subscriptions at any time, prior to final payment.

Dry Days in South Bad for Pastures, but Speed up Harvesting

MEMPHIS, TENN.—The weath was a mixture of good and bad f Mid-South farmers last week.

The hot, dry weather was ideal f harvesting cotton, corn, soybeans a rice, but was anything but good f planting winter pastures, cover cro and small grains.

Extension officials of Arkansas Mississippi and Tennessee reporte in their weekly crop survey tha the harvest of cotton was good with some counties reporting yield better than expected.

In many areas pastures were dr ing up, milk production was off a forest fires continued to grow number.

Cotton harvesting moved near completion last week in Mississip as some counties reported the cro more than 50% gathered, the Missi sippi Agricultural Extension servic said.

Yields generally are turning ou better than expected at the beginnin of the harvest season, T. M. Walle Mississippi extension cotton specialis said.

In Arkansas, the weather was speeding the opening of cotton and harvest of other crops, but was holding back the seeding of winter grains and legumes, and oats which already had been planted were needing rain in order to survive.

A fairly good crop of soybeans i in prospect in most of the majo producing counties. More cotton pick ers were needed in a few heavy cot ton-producing counties.

Cotton picking dominated the farm picture in West Tennessee last week as farmers are aided by almost idea weather conditions. Farmers are re porting fair to good yields in the firs week of extensive picking.

Harvesting also has begun for corn crops in many areas but yields generally are not satisfactory due to an extended dry spell earlier in the season.

H. T. Short, district farm agent a Jackson, said pastures are showing a acute need for rain but critical stage have not been reached. The dr weather is good for harvest but i retarding seedbed preparation.

Frost Hurts Crops in New England Area

BOSTON — Massachusetts truck gardeners labored late into the nigh of Sept. 22 to soak and cover crop threatened with a repetition of th killing frost of Friday, Sept. 21. Thou sands of acres of vegetables wer damaged in central Massachusetts o that date as temperatures dropped t lows of 26 in Barre Plains and Ware

Louis N. Webster, director of the division of markets of the state Department of Agriculture, esti mated truck gardeners in the state would lose $100,000 to the frost. Market gardens in southern Maine and New Hampshire were hit hard.

In North Brookfield, Mass., farm er Louis Petruzzi looked sadly ove truckloads of ruined vegetables an estimated the cold snap cost hi $5,000. "It was 39 at 1 a.m. and just didn't believe the temperatur would go much lower," he said Petruzzi raises beans, tomatoes squash and sweet corn. A neighbor David F. Hayes, said he lost two acre of beans and more than half of a 65 acre squash patch.

Crops are standing later in th field this year as a result of the cold wet spring. Fruit growers, on th other hand, welcome the cold, an potato, onion and tobacco crops ar not affected by it.

SAN FRANCISCO MEETING

(Continued from page 1)

ct, but at the same time can violate e Miller act of 1954, because of a sidue left on the food or feed crop.

"Despite the sincere and concerted efforts of the agricultural chemicals industry, there are registered today under the Federal Insecticide Act, many pesticide chemical uses for which tolerances or exemptions have not been obtained," Mr. Coyne told the representatives of the state and federal agricultural departments. In fact, he explained, "only about half of the raw agricultural commodity uses currently registered under the Act are covered," and the result could be that "many materials of proven value to growers will not be legally available for long established uses" before the beginning of the 1957 growing season.

He attributed the reason for the elay in bringing more uses into ompliance with the Miller Act as "a hortage of residue data on many ood and feed crops.

"More residue testing work is eeded to determine what residues lo result when existing practices are ollowed or to prove conclusively hat no residues will result," he continued.

Allen B. Lemmon of the California epartment reported that his office ests some 2,000 samples of pesticides ach year, from some 1,000 firms andling 12,000 products. Where violations do occur, he said, it is usually because of a "lack of understanding f proper pest control procedures by rowers with small properties."

"There are few cases where tolerances have appeared to be unrealistic rom the standpoint of field operations," Mr. Lemmon said, and reported that his department had found hat the system of having the same olerance for a given pesticide apply o all produce was quite satisfactory.

Adequate legislation, he said, "should provide suitable jurisdiction over three additional aspects of the problems involved in their use." These are "control over pesticide residues in harvested food and feed crops, control over agricultural pest control operators who apply these materials for hire, and control over the use and application of extra-hazardous materials."

W. B. Rankin, assistant to the director of the bureau of biological and physical sciences of the Food and Drug Administration, Washington, discussed the activities of his agency in the regulation of pesticides.

Before the growing season the FDA tries to "keep abreast of new developments," and during the season itself to determine what sprays and dusts are being used and how applied. Samples are taken from farms for examination, he explained.

At the time of shipping of produce, further samples are taken for examination of spray residues.

At a later meeting during the agricultural commissioners convention, Dr. W. L. Popham, director of the crops regulatory programs of the USDA, reported on the progress of plant pest control activities during the past year.

The outstanding objectives have been "to complete the eradication of . . . the Mediterranean fruit fly and the khapra beetle" by January 1, 1957, "if all goes on schedule," he said.

Dr. Popham said that more than half a million acres of land in the greater Miami area had been sprayed following the infestation of the fruit fly, and that a measure of the gain is the fact that after the fifth spray only one fly had been caught in 100 traps, as compared with 300 before the first application.

An estimated ten million dollars will have been spent in eradicating this fly, Dr. Popham said, the cost being shared equally by the Federal and Florida governments—but the price is only a small fraction of the agricultural damage which the fly could cause in a single year.

The khapra beetle, infestation of which is most serious in California, will also be conquered, Dr. Popham believes. "We are moving forward in (its) eradication," he told the agricultural officials.

He cited cases of fumigation of storage warehouse with methyl bromide, which has shown to "give a complete kill." Some 334 sites with a storage volume of 107 million cubic feet have been so fumigated, the largest being a 4,850,000 cubic foot warehouse in Fresno, California. Sixteen tons of fumigant were used for this assignment alone.

Other insects which the USDA has been fighting during the past year are the gypsy moth, which "can be eradicated with a single aerial spray of DDT at the rate of one gallon an acre"; and Hall scale which is "one of the most difficult pests to eradicate" that we have encountered.

On the final day of the convention, five chemical manufacturers' associations sponsored a luncheon for the agricultural officials, with a brief talk given after the meal by Charles O. Barnard, executive secretary of the Western Agricultural Chemicals Assn.

In addition to the Western group, the four other sponsoring organizations included the National Agricultural Chemicals Assn., the Interstate Manufacturers Assn., the Chemical Specialties Manufacturers Assn., and the National Pest Control Assn.

A public relations panel closed the week-long session. Jack Pickett, editor of the "California Farmer" suggested that if agricultural officials would keep more closely in touch with their agricultural press, they would be able to get their messages across to the farmer and general public alike. An understanding would be developed as to what the commissioners are doing, and sympathy for their work. He asked that county commissioners in California make themselves more readily available to representatives of his newspaper, and to call upon the newspaper as a medium for disseminating information.

Henry Schacht, agricultural program director of KNBC, San Francisco, said it was not only a problem, but a duty of agricultural officials to keep in close touch with the press, wire services, and radio farm editors.

The public will generally be willing to comply with restrictive legislation if they are told not only what it is, but why the legislation or regulations have been put into force, Mr. Schacht said. In California, the state department of agriculture has a press officer who can assist county officials to reach the press, he said, and such an officer is probably on the staffs of similar agencies in many other states.

Also participating in the panel and supporting these general views were Phillip Alampi, commissioner of agriculture of New Jersey, and Louis H. Wilson, secretary and director of the National Plant Food Institute, Washington. Panel moderator was Bill Adams, radio editor of the California Farm Bureau Federation, Berkeley.

Speaking on his part of the panel, Mr. Wilson reminded the group that "In approaching the problem of improving our agricultural public relations, we must give recognition to the fact that much is said about the high cost of living, and very little about the high standard of living. There are even some folks who think the farmer is making a lot of money.

"We know that farmers are getting only a relatively small portion of the consumer's dollar," Mr. Wilson continued. "I wonder how many folks realize that the hard-working dairy farmer, for example, receives less than one-half of the 23¢ for a bottle of milk, or that the wheat farmer gets only 3.1¢ of the 18¢ loaf of bread, or that the wool grower gets only $5.00 out of a $50.00 suit."

Mr. Wilson emphasized that the Institute's "founding fathers" made one of the organization's basic objectives "to cooperate with fertilizer control officials in accomplishing a better understanding of the state fertilizer laws."

"Speaking of public relations," he continued, "in the fertilizer industry, we recognize that the state fertilizer laws, administered by the commissioners, have helped us to grow in prestige and in service."

He pointed out that, according to United States Department of Agriculture information, "Fertilizer prices, in terms of plant food content, have advanced less than 10% since 1939. Prices of all farm production items have more than doubled in the same period. But, that's only half the story.

"The same amount of plant food it took in 1939 to produce $1 worth of farm products, will produce farm products today with a value of $2.60. Thus, while today's farmer receives more than 2½ times as much for his farm products as he did in 1939, he pays less than 10% more for the fertilizer it takes to produce them."

Host to the delegates was W. C. Jacobsen, president of the association, and director of the California Department of Agriculture, Sacramento.

APPEAR AT SAN FRANCISCO MEETING—Speakers are shown appearing on different portions of the 38th annual meeting of the National Association of Commissioners, Secretaries, and Directors of Agriculture, in San Francisco recently. At the left is W. C. Jacobsen, president of the group, and director of the California Department of Agriculture, Sacramento. He acted as host to the delegates. Others in photo, left to right, are W. B. Rankin, Food and Drug Administration, Washington, D.C.; Dr. L. C. Glover, entomologist of Shell Chemical Corp., San Francisco; and John T. Coyne, assistant head of the pesticide regulation service, USDA, Washington, D.C.

Pesticide Research At Kansas State College Summarized

MANHATTAN, KANSAS — Basic research using some $45,000 a year is being conducted by the Kansas Agricultural Experiment Station under Dr. Clifford C. Roan of the Kansas State College entomology department, Glenn H. Beck, director, reported recently.

Money for different projects including use of radio-active materials is from the Atomic Energy Commission, $8,300; the Dow Chemical Co., $5,500; the U.S. Public Health Service, $15,870; the U.S. Department of the Army, $8,662; north-central experiment stations' regional funds, $5,000; and the Kansas Agricultural Experiment Station, $3,000.

Under two of the projects, Dr. Roan and Kansas State scientists working with him are labeling, with radio-active tracers, a systemic chemical, Dow ET-57. It is an organic phosphate chemical with the scientific name of O, O-dimethyl-O-2,4,5-trichlorophenyl phosphorothioate. Part of the material then is shipped from here to the U.S. Department of Agriculture stations at Kerrville, Texas, and Corvallis, Ore.; the University of Wisconsin; and the Dow Chemical Co. at Midland, Mich.

At those places, and at Manhattan, the chemical is being followed through beef and dairy cattle, rabbits, and other small animals. Moving through the bodies of animals, the chemical destroys cattle grubs and other insects. Through these studies, scientists hope to determine possible toxic effects of the chemicals on animals, how much chemical residue, if any, transfers to milk, and how much remains in the flesh of the animals.

Funds from Dow and the Atomic Energy Commission are being used in these studies.

The Public Health Service funds are to finance study of the specific way phosphorus insecticides act in insects and higher animals.

Actively participating with Kansas in the north-central experiment stations' research are the Universities of Illinois and Wisconsin, Ohio State University and Iowa State College. Dr. Roan is chairman of the participating scientists from the North Central region.

FUNGICIDE BOOK AVAILABLE

ITHACA, N.Y.—Results of fungicide tests of 1955 have been prepared by the American Phytopathological Society, and are being made available through the APS. Copies of the 16-page booklet containing this information are available from Dr. A. G. Newhall, department of plant pathology, Cornell University, Ithaca, N.Y. The price is $1 each.

Soils in Many States Suitable for Application of Fertilizers in Fall

L. B. Nelson

It is the purpose of this paper to attempt to reconcile observed differences between regions and to point out factors that influence loss of fall applied fertilizers and their probable importance in difference parts of the United States. Major emphasis will be placed upon nitrogen since this element is the most easily lost from soils.

Since fall application involves placing the fertilizer on the soil several months in advance of the usual spring application, the problem resolves itself into the fate of the fertilizer nutrients during this period. Obviously a multitude of factors are involved, some of which are more important in certain climatic, topographic, and soil situations than in others. The major factors, however, would appear to include leaching of nutrients from the root zone, and the conversion of nitrogen into leachable form; loss through erosion; volatilization of the nitrogen into the atmosphere; and immobilization and reversion of nutrients.

Lysimeter data give the first clue to the problem in showing that nitrogen appears in the percolate in considerable amounts and that it is present almost entirely in the nitrate form. Phosphorus seldom appears in the leachate except in trace amounts. Potassium occurs in quantities second to nitrogen but after a considerable lapse following fertilizer application. Thus, in the leaching of fall applied fertilizers, the first concern is with nitrogen and to a lesser extent with potassium.

Lysimeter studies show that the amounts of nutrients lost from the soil roughly parallel the amounts of the percolate. Thus, low nutrient loss is associated with low amounts of percolate. Using this as a criteria, determination of the percolation losses over-winter offers one procedure for evaluating the possibilities for leaching losses from fall applied fertilizers.

The amount of water percolating from the soil is related to the total amount of water going into the soil, the amount lost to the atmosphere through evaporation and transpiration, and the amount held in the soil.

Obviously, the amount of water percolating through the soil will not be the same under different climatic conditions since it varies with precipitation and evapo-transpiration. Neither will it be the same for different soils within the same climatic area since the water-holding capacity of the soil, its permeability, and the amount of water lost by runoff will vary between soil types, and with local conditions.

In order to obtain a percolation pattern for various parts of the country, it is necessary either to catalog all existing percolation data from sources such as lysimeters, runoff plots, and tile drainage flows or to depend upon empirical calculations such as those of Thornthwaite. Inasmuch as the former would require collecting and evaluating a vast amount of data and since there is no assurance that sufficient data exist to meet the requirements, it was decided to use Thornthwaite's water surplus map for the eastern United States. A modified version of this map is given in figure 1.

In deriving the water surplus map, Thornthwaite calculated "potential" evapo-transpiration (the amount of water which would transpire or evaporate if it were available) for some 3,500 weather bureau stations and related these to precipitation to determine average annual water surplus in inches. In his procedure, Thornthwaite assumed a uniform 4-inch water holding capacity of the soil.

There appeared to be fairly good agreement between Thornthwaite's water surplus data and the limited amount of percolation data obtained from lysimeters and runoff plots, although there was a tendency for his data to be somewhat higher.

Considering the percolation information from the various sources, it would appear that Thornthwaite's 0 to 3-inch water surplus zone (figure 1) represents an area where percolation is negligible during most years. Possibly the line between the 0 to 3-inch and 3 to 8-inch zone should be extended slightly eastward on the basis of the information from the erosion plots at Clarinda and Bethany. The 3 to 8-inch zone, except in the Southeastern states, represents an area where moderate percolation would be expected most years.

It is noteworthy in this respect that considerable tile drainage is practiced in parts of the 3 to 8-inch zone indicating that percolation does occur. The 8 to 12-inch zone is an area where percolation occurs to considerable extent. There can be little question that excessive percolation occurs in the 12-inch zone and above. The 3 to 8-inch zone in Florida and its extension along the eastern sea coast represents an entirely different situation than exists in the 3 to 8-inch zone in the Midwest.

In the Southeast, this zone encompasses an area where evapo-transpiration exceeds precipitation in all months except December, January, and February. However, due to the low water-holding capacity of the sandy soils and to the fact that many crop plants root shallow where pans or high water tables exist, a single rain of any magnitude will cause percolation of water out of the root zone.

It must be emphasized that the conclusions on percolation are based on average rainfall and evapo-transpiration conditions, and on permeable soils with root zones of an arbitrarily chosen 4-inch water-holding capacity. Wetter seasons increase the water available for percolation and dryer seasons decrease it. Also, soils of lower water-holding capacity (below 4 inches) result in increased percolation and those with higher water holding capacities (above 4 inches) in decreased percolation. Furthermore, claypan soils or soils with slowly permeable strata would result in decreased percolation.

Where percolation occurs, the amount of nitrogen leached from the root zone depends upon the form of nitrogen in the fertilizer and the rapidity and degree of conversion of non-nitrate forms to nitrate. Sodium nitrate contains all of its nitrogen in the leachable nitrate form, ammonium nitrate contains 50%, ammonium sulfate none, etc. The non-nitrate forms must be converted biologically to nitrate in order to leach.

At high soil temperatures, conversion of ammonium to nitrate proceeds rapidly and urea converts to ammonia in a few days and on to nitrate soon after. On the other hand, the organic nitrogens such as calcium cyanamid, the urea-formaldehyde, and cotton-seed meal or tankage convert slowly. According to Sabey and Frederick, the rate of formation of nitrate from ammonium salts decreases with temperature and comes to a standstill at about freezing. The results of Sabey, et al., show that nitrification was 50% as rapid at 58°F as at 70°F. Frederick's data show considerable nitrification even at 45°F.

Thus, the common recommendation to delay fall application of non-nitrate carriers until the soil temperatures reach the lower 50's would appear open to question. However, waiting for the cooler weather should result in decreasing the leaching hazard but not in overcoming it. Undoubtedly, the rapidity with which soil temperatures decrease below 50° is a factor in conversion. The fall to still lower temperatures would be much more rapid in the North than in the South.

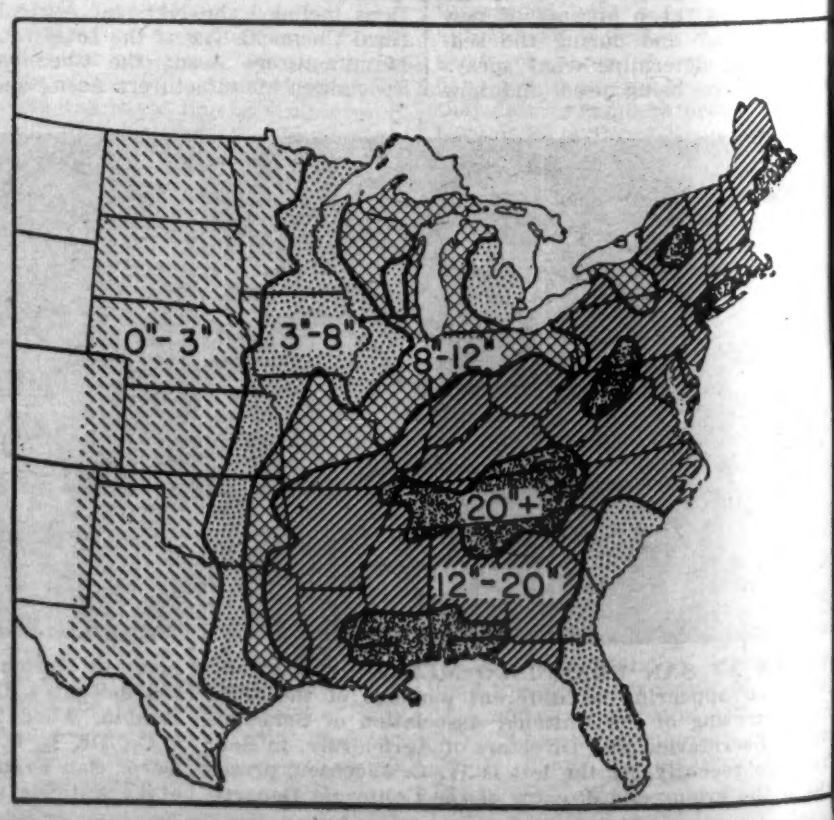
The maps in figure 2 show the progression of low average daily minimum air temperatures by months from North to South in the fall and early winter and from South to North in the late winter and spring. Average minimum air temperatures are used because soil temperature data are meager and the minimum air temperatures probably more closely proximate plow-layer soil temperatures than monthly mean temperatures.

While the 40°F. lines indicate in a general way the temperature pattern by months, they are not intended to show safe areas for fall application of nitrogen fertilizers. They do indicate the general pattern of nitrification rates that can be expected, i.e., relatively slower nitrification in the North during the fall and early spring than in the South.

It appears possible to divide the Eastern and Plains states into areas according to leaching and to practicability for fall fertilizer application. This has been attempted in figure 3. Area I would appear the most suited for fall application. Except for years of unusually high precipitation, percolation would be nil and leaching losses unlikely even when all of the nitrogen was applied as nitrate. Fall application in Area II would be somewhat less desirable than Area I but certainly much more desirable than Areas III and IV. Area II encompasses a region having either relatively low percolation or low fall temperatures, or a combination of both.

In the higher rainfall portions of Area II, the risk from fall application would be greatest particularly if a nitrate form of nitrogen were applied. Fall application on permeable soils in Area III would appear questionable since it represents a higher precipitation area than either Areas I or II. Nitrate forms would leach so the major point of consideration involves the degree and ra

FIGURE 1



EDITOR'S NOTE

The authors of this paper are L. B. Nelson and R. E. Uhland, head and soil conservationist, respectively, of the eastern soil and water management section, soil and water conservation research branch, Agricultural Research Service, U.S. Department of Agriculture. They discuss thoroughly here factors that influence loss of fall-applied fertilizers and their probable importance in different parts of the U.S. Possibilities for such leaching losses are evaluated by the authors from the standpoint of percolation of water from the soil in various areas and temperatures as they relate to conversion of ammonia-nitrogen in fertilizers to leachable nitrate forms. The paper concludes that on this basis, leaching losses would be negligible in the plains states and parts of Minnesota and Iowa. Progressing eastward, however, leaching from most soils is likely to increase, making fall application questionable. In the south, where high percolation and temperatures predominate, fall application appears to be inadvisable. This material was presented originally before the Soil Science Society of America.

ity of conversion of non-nitrate to
trate.
In the latter respect, conversion
uld be slower in the cooler north-
n portions of Area III than in the
uthern. Area IV, because of high
ecipitation and higher tempera-
res, would be undesirable for fall
plications.

It is realized that the four areas defined in figure 1 are very broad and their exact boundaries open to question. However, the approach used might justify further study and refinement. Regardless of the weaknesses of the present study, it does emphasize the danger involved in taking fall application recommendations developed in one part of the country and applying them in another.

It emphasizes, also, the need for careful consideration of climatic factors before drawing conclusions from 1 or 2 years of field data. It must be recognized, however, that local variations in soil permeability can markedly influence the efficiency of fall applied fertilizer.

Losses of fall applied fertilizers are not limited solely to leaching. Erosion loss during the period from fall to spring is a point for major consideration since erosion has been shown to be a selective process wherein eroded materials contain considerable more plant nutrients than the soil from which it was eroded. Nutrients applied on or near the surface are thus subject to erosion loss. Under extremely erosive conditions, erosion loss may make fall application undesirable.

In general, soil losses from water erosion are less during the over-winter period than during late spring and summer when high intensity rains are more frequent. However, in northern areas, erosion losses may be high when rainfall and thawing of snow occur at the same time on partially unfrozen soil. Erosion losses are less where surface vegetation is present, on level and slightly sloping lands, and on soils of high permeability. Care in selecting relatively non-erosive conditions for fall application of fertilizers would appear desirable.

Loss of nitrogen into the atmosphere through volatilization is a factor affecting efficiency of nitrogen fertilizers. Whether this factor is important in fall application appears open to question. Consideration of some of the factors involved in nitrogen volatilization from fertilizers may give some enlightenment on the problem. Review of the literature indicates that volatilization may be as ammonia or as gaseous nitrogen in the form of nitric or nitrous oxides. Ammonia losses, which may range as high as 20% of the nitrogen applied, are limited largely to alkaline and over-limed soils, and are greatest where soil temperatures are high and the soil exchange capacity is low.

Ammonia losses probably are greatest in the naturally-occurring, high pH soils of the west and especially under the high temperatures of the southwest. Ammonia volatilization thus would appear to be a minor factor under eastern conditions where the soils are usually below pH 7. Furthermore, with fall applied nitrogen, low temperatures would reduce possibilities for over-winter losses.

Possibilities for losses from gaseous nitrogen during the over-winter period are difficult to evaluate. Studies show that a sizeable portion of applied nitrogen cannot be accounted for. Allison, in reviewing nitrogen balance sheets derived from lysimeter data, reports that crops commonly recovered 40 to 80% of the nitrogen that was added or made available in the soil, a large part of the nitrogen not recovered in the crop was found in the leachate, but substantial unaccounted losses occurred in most lysimeters.

For example, 51 lysimeters that received nitrogen and were planted to non-legume crops showed an average unaccounted loss of 20% of the total available nitrogen. Apparently most lysimeters contained acid soils; hence, losses from ammonia volatilization would be negligible. Furthermore, most of the lysimeters did not permit runoff. Thus, it appears that the losses were as gaseous nitrogen, probably largely as nitric or nitrous oxides. There is no indication, however, that fall nitrogen applications favor gaseous loss.

Nitrogen is immobilized in the process of decomposition of crop residues by soil micro-organisms. Temperature is a factor as in the conversion of ammonia to nitrate. If the fertilizer is applied when the soil temperatures are low, then the rate of immobilization would be slow. Actually, immobilization of the nitrogen might be desirable since it results in less nitrogen being available for leaching over-winter, and at the same time would release nitrogen during the period of greatest crop demand during the hot summer months. However, it does not appear that immobilization of nitrogen would be a factor of much importance in fall application except in the warmer areas.

Uptake of nitrogen by growing plants or cover crops during the fall and winter is, of course, a factor in areas having milder winter climates. Evidence indicates, however, that such crops tend to reduce but not overcome leaching.

The possibility for greater reversion of fall-applied phosphorus to forms unavailable to the plant is frequently argued as a reason against fall application. The vast amount of data showing residual benefits from applied phosphorus and its accumulation in soils to a point where little response is obtained from further additions would appear to refute the view that fall applied phosphorus is less effective than spring applied.

However, if water solubility is needed for starter effects, and the amount of phosphorus applied is low, then over-winter reversion to water insoluble forms might be a factor of some importance. The problem would appear to resolve itself into whether the farmer is concerned with providing phosphorus to meet the major phosphorus needs of his crops or with immediate effects of small amounts of soluble phosphorus on the early growth of the first crop. For meeting major crop needs, fall application would seem as desirable as spring. For starter effects, fall application would not be as effective as spring application.

FIGURE 2

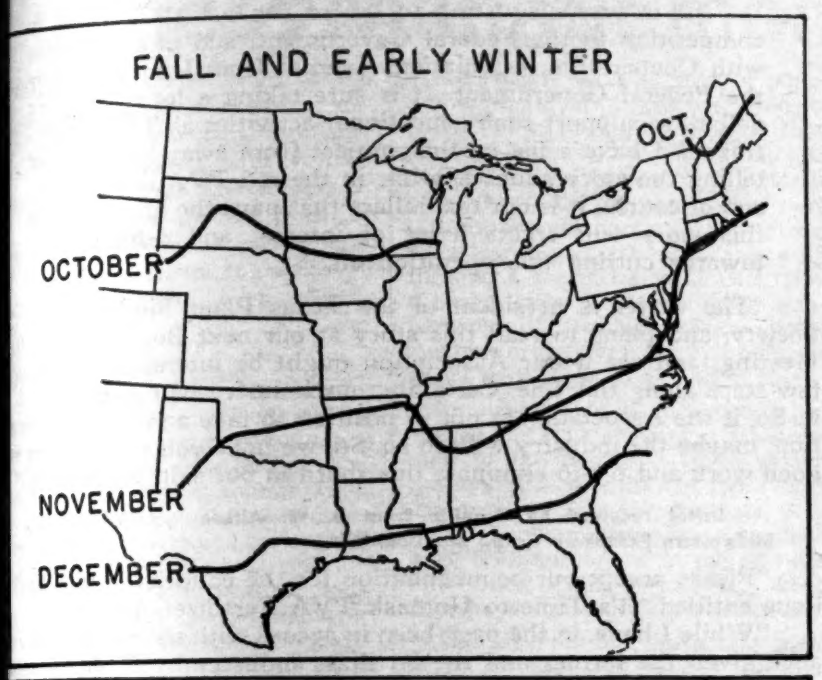
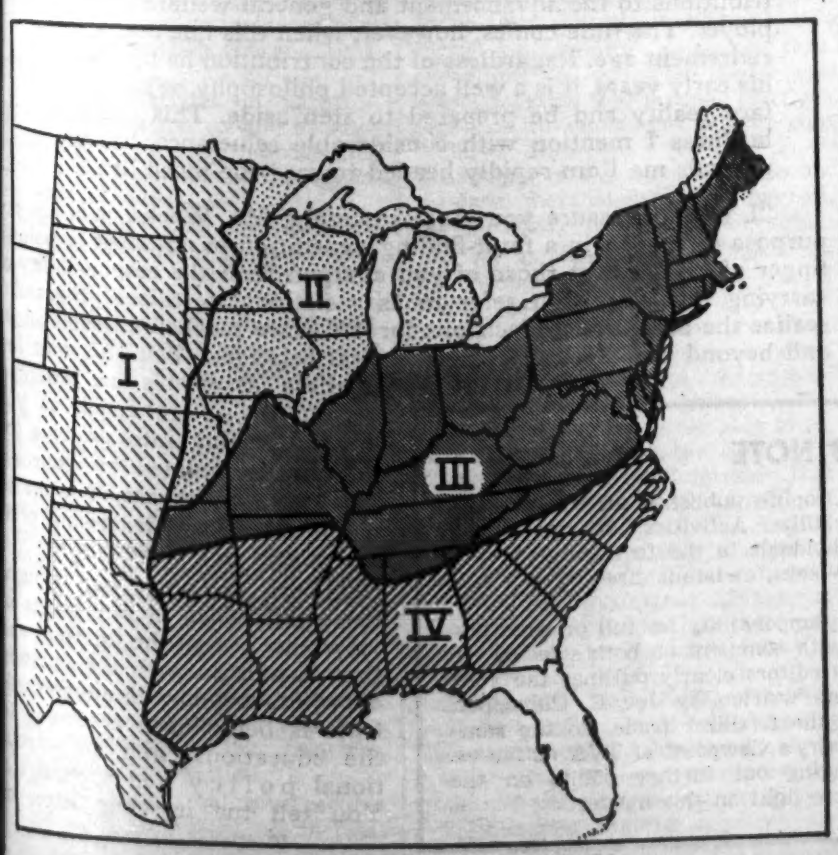


FIGURE 3



Heavy Fertilizing Triples Yields in Oat Silage Tests

ST. PAUL—Heavy fertilizing more than tripled profits from oat-silage fields in 1956 field studies at the University of Minnesota's Southern School of Agriculture and Experiment Station at Waseca. But low fertilizing rates didn't all pay off.

Lowell Hanson and A. C. Caldwell, university soils scientists, in cooperation with John Thompson, agronomist at the Waseca station, compared eight fertilizer treatments with plots that got no fertilizer. The plots were on Nicollet clay loam soil.

Plots that received 120 lb. of nitrogen, 160 lb. of phosphate and 160 lb. of potash per acre yielded 15.6 tons of silage per acre, for a net profit of $53.20 from each acre, above seeding and fertilizer costs. But plots that got only 80 lb. of each nutrient averaged only $16 per-acre profit—exactly the same net profit as for plots that received no fertilizer at all.

These net return figures are based on $32 per acre for seeding costs, 13¢ per pound for nitrogen, 10¢ per pound for phosphate and 5¢ for potash.

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FOLLOW-UP ON A CONTROVERSY . . .

Pros and Cons Regarding TVA's Fertilizer Activities

TVA SAYS:

Letter to Croplife from Martin E. Weeks, assistant director, Division of Agricultural Relations, Tennessee Valley Authority, Knoxville, Tenn.:

The editorial in Croplife of Aug. 27, 1956, entitled "It's Time to Unmask TVA Fertilizer Activities," omits such significant facts about TVA's fertilizer and agriculture programs that it is necessary for me to point them out and request that you do the same for your readers.

First of all, it is unnecessary to "unmask" TVA fertilizer activities; they have never worn a disguise of any kind. The facts and circumstances concerning them are contained in detailed publications and official, audited reports transmitted to Congress year after year and readily available to the press and the public.

The nub of the editorial is the contention that TVA has entered into outright commercial competition with private commercial fertilizer manufacturers. This is not true.

> TVA production amounts to less than 2% of the national production of fertilizers. Moreover, the distribution of TVA fertilizer is scattered rather than concentrated in one area. The fact that this small proportion reaches into some 35 states further dilutes any competitive effect. Even more important is the nature of the distribution; TVA fertilizer is not "dumped" on the market but is available only under special educational programs. To illustrate, 70% of TVA ammonium nitrate is used by farmers on soil conserving hay, pasture, and cover crops. Only 20% of the commercially produced straight nitrogen was used for those purposes.

TVA's policy since its inception has been to accomplish the purposes of the TVA Act—to improve fertilizers and lower their costs to the farmers—by cooperating with industry rather than competing with it. Its record over the years substantiates this policy. For example: It is a matter of history that the farmer market for triple superphosphate was almost non-existent in 1933. TVA began making it and introducing it to farmers through the test-demonstration program, the first of its farmer education programs. Today a substantial market exists for the fertilizer industry. In 1935, the first year of TVA production, total U.S. output was but 91,000 tons, of which 24,000 tons was from TVA; in 1955, U.S. output was 1,570,000 tons, of which TVA produced 55,000. This represents a considerable decline in TVA production from the 1948 peak of 158,000 tons.

The ammonium nitrate story is progressing along similar lines. In 1943, in the midst of the war, ammonium nitrate as a fertilizer was almost unknown to farmers. TVA converted its munitions operation to fertilizer production and again introduced the product widely. The demand for the product was so great that industry could not supply it alone. At the wartime peak, TVA's 131,000 ton production was 81% of national consumption. In 1955, TVA's 192,000 was down to 17% of a national market which had leaped to 1,115,000 tons and was only 6% of the total production of nitrogen fertilizers. In fiscal 1956 it was down again to 138,000 tons. In the light of greatly expanded consumption, this can scarcely be called "demoralizing" or a "flood" on the market.

In short, the facts demonstrate that TVA, far from competing for markets, has been an important factor in expanding the markets of private manufacturers and dealers.

Your reference to "tax monies" indicates a misunderstanding of the financing of the TVA Fertilizer-Munitions Development Center at Muscle Shoals. It is a laboratory and experimental center established to achieve in the field of soil fertility and fertilizer development about the same objectives that the U.S. Forest Products Laboratory and the laboratories of the Bureau of Mines seek in their own fields.

> In the case of TVA, the operations are not commercial, but they do produce an income. This income has been more than sufficient to cover the costs of production. Frequently, in recent years, it has covered in addition the costs of both the experimentation and agricultural education programs. At times it has provided a modest contribution to the Federal Treasury. It is quite a bargain for the taxpayers. Technological developments are made available free to industry and farmers receive the benefit of improved fertilizers, yet the net cost in recent years has been very modest. (See TVA annual report for 1955, page A13.)

The most puzzling omission from the editorial, however, is any reference to the farmer. It places the farm chemical industry in the position of judging TVA from the viewpoint solely of its own self interest. We doubt that this accurately reflects the attitude of the industry. Certainly, it does not reflect the instructions given TVA by Congress in the TVA Act.

Fertilizer is one of the important tools enabling the farmer to

(Continued on page 20)

FERTILIZER INDUSTRY LEADERS SAY:

Letter received by Croplife from B. L. Henderson, president, Campbell Fertilizer Co., Inc.:

"We have a copy of your August 27, issue of Croplife, and n the very interesting editorial on page 22 relative to TVA Fertili Activities. Naturally, we can't determine what Editor was responsi for placing this story in your magazine, but whoever is, is on the ri track, we believe.

> "It is sure disgusting to try to run a little business in competition to the Federal Government, and in competition with Cooperative Associations exempt from Income Tax by the Federal Government. It is sure taking a lot of our Tax dollars to support such educational activities as TVA on fertilizers. I have a file on this subject from away back yonder telling the story about how far in the red TVA is operating, and of course, it is our tax dollars that pays the bill. We hope this story will create a lot of interest and definite steps towards cutting this operation off.

"The writer is president of the Texas Plant Food Educatio Society, and plans to read this story at our next Board of Directo Meeting, and see if our Association might be interested in takin few steps along this line. Certainly, our industry will be interested it. So, if the Association is not in position to take a step in this dire tion, maybe the industry will do so. So, we hope you will keep up t good work and try to eliminate this thorn in our side, particularly."

Letter received by Croplife from D. W. Aitken, general manager, Midwestern Phosphate Corp., Madison, Wis.:

"Please accept our commendation for the editorial in this week issue entitled 'It's Time to Unmask TVA Fertilizer Activities.'

"While I have, in the past, been in accord with the valuable assis ance given the farmer and the fertilizer industry by TVA's demo stration programs, I thoroughly agree that their activities have d generated into a last-ditch struggle to keep themselves in the fertiliz picture.

"I shall be glad to participate in any concerted effort to bri this attitude to the attention of the next session of Congress, includi an appearance before the committee considering TVA appropriation You may wish to put me in touch with other interested persons."

Letter written to TVA by Joe E. Culpepper, vice president-sales, Spencer Chemical Co., Kansas City:

"I am happy to agree with your statement that TVA in the pa has contributed substantially in making ammonium nitrate a wel recognized and widely accepted solid nitrogen fertilizer. Private i dustry generally, in my opinion, would be unanimous in sharing th view. I assure you of our appreciation for this fine service and co gratulate you and your associates for a job well done.

"On the other hand, however, it seems to me this is no more tha industry, as taxpayers, had a right to hope for, or even expect, fro a government agency. It does not follow, according to my reasonin that the contributions TVA made in the past entitle TVA to th right to go beyond the experimental and developmental program in substantial commercial competition with private industry.

> "TVA's ammonium nitrate demonstrational and experimental program, in my thinking, is somewhat analogous to a valuable man who over the years has made many fine contributions to the advancement and general welfare of his employer. The time comes, however, when this fine man reaches retirement age. Regardless of the contribution he had made in his early years, it is a well accepted philosophy he should then face reality and be prepared to step aside. This retirement business I mention with considerable reluctance, because it reminds me I am rapidly headed toward the finish line.

"I want to assure you most sincerely, Mr. Weeks, it is not m purpose to engage in a fault-finding expedition in an effort to point finger of criticism at those of you charged with the responsibility carrying out what you refer to as a national fertilizer program. realize the basic policy decisions for TVA are reached at levels abo and beyond the division of agricultural relations. You and your im mediate associates are attemp ing to do as good job as yo can in putting into practice th policies formulated by your su periors. . . . Again, I want t emphasize I am discussing pri ciples and not personalities.

"There is only one gener basic difference in our points view, as I see the matter, an that has to do with the questio of whether your ammonium n trate is being used according t the educational and demonstr tional policy you promulgat You tell me in your letter

(Continued on page 20)

EDITOR'S NOTE

In the issue of Aug. 27, 1956, Croplife published an editorial entitled "It's Time to Unmask TVA Fertilizer Activities." Its appearance has brought wide comment from individuals in the fertilizer industry, and also a rebuttal from Martin E. Weeks, assistant director of TVA's division of agricultural relations.

In order to give the matter every opportunity for full presentation to our readers, we are printing herewith comment on both sides of the issue. Mr. Weeks' letter to Croplife's editors clearly outlines the TVA thinking on the matter, while letters written by Joe E. Culpepper, Spencer Chemical Co. and others in the fertilizer trade, do the same type of portraying the fertilizer industry's viewpoint of TVA activities.

Subsequent correspondence bringing out further points on the subject will be welcomed, to shed more light on this matter.

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

ARM SUPPLY DEALERS AND

Business Management Problems

EDITOR'S NOTE: "Putting the ueeze" on the farm dealer is de- ribed in the accompanying article a situation where sales volume ops and costs rise. The author, O. Turner, head of the department of siness administration, University Wyoming, presents some proven ethods of staying out of the queeze."

It seems to me that the ordinary mall businessman, including the ealer, is always in a position where vise is trying to close on him. The p of the vise is sales volume which ways seems to want to come down. he bottom of the vise is costs which e always threatening to rise and us complete the process of "put- g the squeeze" on the manager. the business is to survive, manage- ent must always be ahead of these o factors.

Costs

Ordinarily the small businessman n do little to influence the selling ice of his products. Competition nd market conditions usually have ore influence in this area than does e manager. It is only under un- sual conditions that the small busi- essman can gain a price advantage er competitors because most of em have to buy in relatively small uantities. For these reasons, the usinessman is apt to find himself a position between relatively fixed elling prices and material costs and e limited to the control of operat- g costs—those costs involved in onducting the day-to-day activities f the business. Operating costs in- lude such things as rent, light, heat, elephone, interest, delivery charges, oss from bad debts, advertising, sell- g, supplies, wages and other items f operational cost.

Some of these costs are fixed in ature—that is, they must be paid hether the business sells anything r not. This usually includes such hings as depreciation charges, rent, ixed salaries, etc.

Others are variable in nature—hey increase as the volume of sales ncreases. This category includes such hings as sales commissions, advertis- ng, materials, etc.

Whether operational costs are fixed r variable, they must be paid before he business can show a profit. If ome of these costs can be reduced r eliminated, or allocated in such manner that the business derives ore sales as a result, then the rofits of the business will increase. t is in the area of cost control that he businessman finds greater possi- ilities for increasing his profits. The est way to control the operating osts of doing business is to initiate cost control program.

Records: The first essential step in ny cost control program is to be ertain that you have a record sys- em which lets you know what your osts are, and which records all costs nvolved in doing business. By this, mean a system which breaks costs nto classifications so that they can e analyzed item by item.

It is not enough that your records ell you what your costs are in total —they must tell you what specific, individual items of cost are. For example, your records may show that your selling costs are $1,000, but this does little good from a control standpoint if you do not know what part of this amount was paid for labor, advertising, gas, oil, etc. It is only through a detailed classification that a businessman is able to make comparisons of various expense items and be warned when the expenditures in one area begin to get out of line.

An item by item comparison has opened the eyes of many a businessman to the fact that he is paying a staggering amount for items that are really doing the business very little good, or that expenses which have been authorized in the past are still being paid periodically when they have outlived their usefulness.

This business of records may seem to be so basic that it does not even need to be mentioned in connection with feed and seed store management. The facts are, however, that the most comprehensive and thorough national survey ever made of farm supply store operations showed that one of the main reasons why such dealers lost money was that they allowed operating costs to become too high—because of their failure to keep accurate records and use them for all they were worth.

Bad Management Causes Failures

Another recent survey of 800 business failures revealed that the failures were due to three reasons: (1) 91% of them were due to bad management based on poor and inadequate records, (2) 5% failed due to lack of capital, and (3) 4% failed due to competition.

This survey showed that price cutting was the No. 1 factor behind most failures and that it almost always resulted from inadequate records on operating costs. No farm supply merchant can stay in business if he sells at cost or at a markup which does not allow himself to cover the total of his expenses. An adequate records system will help

(Continued on page 14)

By RAYMOND ROSSON

County Agent, Washington County, Tenn.

Hard Pans? Yes. By overgrazing it is possible to develop a "hard-pan" in our soils. And by the same token, over emphasizing one line of thinking, we could develop an "educational hard-pan" at most any school level.

Booklearning may last about 12 years, but education is a debt the present generation is due the future generation. It is to train the mind to the use of its powers, rather than fill it with the accumulation of others.

Education is as important as railroads; airports; city halls; court houses or fertilizer factories.

Our American youth are heirs of the best land, to grow faith and strength, that the world knows today. What if youth does have to sacrifice some goal for awhile, or deny itself some privilege? What if youth does have to learn, "what a good country is worth" in its own terms of duty, rather than to read it out of musty books?

And it wouldn't hurt the American public to know, "What a good progressive, solvent agriculture is worth to Main Street."

We must keep the educational machinery oiled and in good repair, but let's not bust the gears, by feeding in the wrong kind of raw material. This should go for "oldsters" as well as "youngsters," and as the kids say, "it's something to dig for . . . you can't drag and get it."

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

The farm supply dealer who makes the most effective use of a well-coordinated on-the-farm merchandising program will acquire the largest share of the total business, claims one authority in the field. He outlined a program which he said will help retain the retailer's position in the over-all plan for distribution of fertilizer and other farm supplies.

This authority referred to a "new kind" of businessman-farmer who has frequently been neglected at his place of business by the local farm supply merchant, who should be most interested in the large purchasing capacity that farmer has to offer. With few exceptions, he said, "the dealer who wants to grow and prosper can't afford not to make on-the-farm contacts."

As some of the ways in which on-the-farm merchandising can pay off, the authority listed the following:

1. It is definitely established in the farmer's mind that the dealer values his business.
2. More creative selling promotion is possible, when individual potentials and needs are determined through on-the-farm analysis.
3. The dealer is better able to retain present business, since he is in a better position to determine that products are being properly used for maximum results.
4. The dealer is able to prevent loss of business which sometimes results from misunderstandings, or minor irritations. The contact man has a chance to correct such situations.
5. Regular farm calls on an organized basis can help to reduce delivery costs, and enable the dealer to operate with a lower inventory for improved merchandise turnover.
6. Through regular contacts, accounts receivable can be better controlled, and bad debt losses minimized. The dealer will be able to make better use of his operating capital.
7. By making regular farm calls, the dealer is able to stress the service angle in the most effective way to offer assistance to the farmer with his problems.
8. The dealer acquires community prestige on the basis of field representation.

Maine Bankers Lend a Hand

Maine bankers are giving fertilizer dealers in the state some practical help in educating farmers to the necessity for maintaining soil fertility.

A brochure prepared by the Maine Bankers Assn. explains that "yields of pastures and haylands in Maine are low and unprofitable, unless fertilization is practiced." The 16-page publication is intended for distribution to Maine farm-

(Continued on page 13)

Northeast Dairy Farms Averaged $229 for Fertilizer in 1955

WASHINGTON—Dairy farms in the central Northeast dairy area spent an average of $229 for fertilizer and lime in 1955, according to a farm cost study released by the U.S. Department of Agriculture.

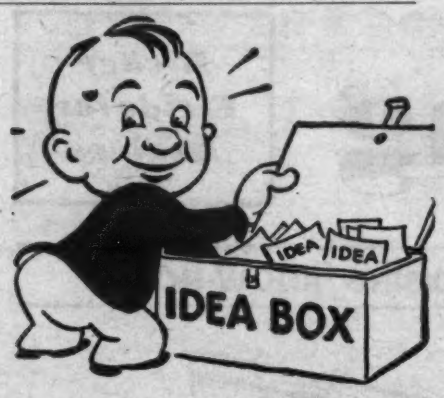
This figure compares with an average expenditure of $225 in 1954, $253 in 1953, $257 in 1952 and the 1937-41 average of $102.

Included in the Northeast area in the study were parts of Pennsylvania, New York, Connecticut, Massachusetts, Vermont and New Jersey.

In 1955 the farms averaged $8,753 in cash receipts, $2,803 in net cash farm income and $4,433 in net farm income.

HIGH YIELDS GOOD BUSINESS

ITHACA, N.Y. — Despite the nation's wheat surplus, it remains "good business" for farmers to grow high acre yields, a New York State College of Agriculture professor says. A. A. Johnson, a plant breeder, said "this is so because high wheat yields result in the lowest production cost per bushel."



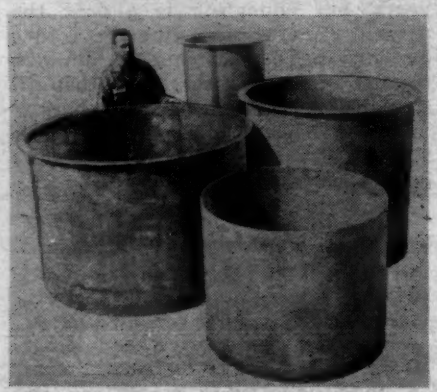
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6479—Farm Chemical Tanks

Corrosion-resistant polyester glass reinforced tanks are being offered by Haveg Industries, Inc. It is claimed that the tanks resist the attack of liquid fertilizer solutions, phosphoric and sulfuric acids as well as other fertilizers, insecticides and herbicides. Company officials say that the polyester glass tanks are also extremely light. The heaviest of those pictured is 150 lb., holds 600 gal. and can be



put in place by two men. Flat covers are available for all tanks. A wide range of sizes (up to 30,000 gal.) is available. The firm also designs tanks for individual requirements. Also available is a fume duct for removal of corrosive and obnoxious vapors, scrubbing systems and related accessories. Secure more complete details by checking No. 6479 on the coupon and mailing it to Croplife.

No. 6476—Soil Fertility Handbook

Quantity prices of a publication entitled, "Soil Fertility Handbook" are available from the publisher of Successful Farming. The handbook was prepared from an article published recently by the magazine. Sections of the handbook are devoted to soil tests, yield goals and fertilizer needs, yield checks, plant food deficiencies, drainage, fertilizer fact and fancy, and how, when and where to apply fertilizer. For price information on the handbook check No. 6476 on the coupon and mail it to Croplife.

No. 6477—Fertilizer Hose

A new hose has been developed by Hewitt-Robins, Inc., to dispense liquid fertilizer from farm storage tanks. The hose is made with a synthetic rubber lining claimed to be resistant to ammonia nitrate solutions and petroleum products. The outer covering is green neoprene resistant to sunlight and oxidation. The hose is available in ¾-in. and one-in. diameters. Secure more complete details by checking No. 6477 on the coupon and mailing it to Croplife.

No. 6481—Insecticide Formulations

Information concerning insecticide formulations incorporating tetraethyl pyrophosphate is available from Eastman Chemical Products, Inc. The company's trade name for its tetraethyl pyrophosphate product is TEPP. According to the company's literature, "the unique distinction possessed by insecticides based on TEPP is their property of decomposing into a harmless residue within 48 hours after application." The formulations are recommended for mites, aphids, nymphs, thrips, caterpillars, flea beetles and other soft-bellied insects on fruit and vegetable crops. The company also has a film available on the subject. To secure more complete details check No. 6481 on the coupon and drop it in the mail.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6473—Seed Treating Unit

A new type of product called the liquid Adaptor is being marketed by Parsons Chemical Works. The product is used for converting the dust type automatic seed treaters to a liquid treatment process. It is all plastic and is claimed to be safe to use on any corrosive seeding treating chemicals such as various liquid mercury types. It is said to meet the specifications in those states where laws require dyed treated grain. A specification sheet which includes sectional drawings of the unit is available without charge. Check No. 6473 on the coupon and mail it to this publication.

No. 6475—Film

A new film, "Low-Volume Spraying," produced by the Hercules Powder Co., is the seventh in a series of films dealing with insect control, now available from Hercules. The newest in the series, like the first six, is available in 16-mm., sound-and-color. It depicts the procedures for mixing insecticides and adjusting sprayers for efficient operation. "Low-Volume Spraying" is a 14-min. film. Secure complete details about securing film by checking No. 6475 on the coupon and mailing it to Croplife.

No. 5535—Steel Tank Brochure

A 16-page color brochure on bolted steel tanks has been issued by the Columbian Steel Tank Co. Described on the cover as "catalog No. 656," the brochure shows pictorially the tanks manufactured by the company for a large variety of purposes. Some of the uses include grain storage, water supply, the storage of dehydrated alfalfa under inert gas pressure and various liquids. Improvements in tank construction by the use of new synthetic gasket materials is pictorially described in a two-page section and one section includes a partial table of the American Petroleum Institute's dimensional specifications for bolted steel tanks from 100 bbl. to 10,000 bbl. capacity. Copies of the brochure are available free. Check No. 5535 on the coupon and mail it to this publication.

No. 6478—Rotary Feeder, Seeder

The Smith-Douglass Co. has introduced a lightweight fertilizer distributor and seed sower, called the Nutri-feeder and seeder. It is carried on the shoulder and is designed to carry up to 25 lb. of material. Movement of a lightweight handle applies seed or pelleted fertilizer in a rotary manner. The advantage, say company officials, is the distributor's ability to distribute fertilizer or seed evenly and steadily without leaving any areas uncovered. To secure more complete details check No. 6478 on the coupon and mail it to Croplife.

No. 6480—Strawberry Weeds

Strawberry weed prevention with CRAG Herbicide-1 is described in a new strawberry folder released by Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. Company officials in announcing the folder, state: "Growers and agricultural experiment stations report CRAG Herbicide-1 can save well over 75% of the labor that would go into handweeding and this new pamphlet shows how strawberry plants grow with increased vigor and give greater yields when strawberry rows are kept weedfree. The product kills weed seeds as they sprout and will keep out most broad-leaved and grass weeds for three to six weeks. Late summer applications help to prevent early fall and winter weeds." Copies of the folder are available by checking No. 6480 on the coupon and mailing it to Croplife.

No. 6472—Organic Nitrogen

A sample and brochure describing an all organic nitrogen product manufactured by the Smith-Douglass Company, Inc., are available without charge. The product is called by the trade name, Nutronite, but was formerly called Smirow tankage. It is not a sewage or garbage sludge, according to the company's literature. The literature states that the product "is the 100% natural organic addition to mixed fertilizers. Its nitrogen is 90% water insoluble and 90% available—for that all-season effect on plant growth." The product can be bagged for lawn and garden fertilizers and is suitable also for golf courses. Dealer inquiries are invited. Mark No. 6472 on the coupon and mail it to Croplife.

No. 6474—Liquid Fertilizer Unit

Operational details of a "package liquid fertilizing mixing unit" built by the Standard Steel Manufacturing Co., Inc., are available without charge. The unit is claimed to be completely self contained and automatically meters and weighs all raw materials for batch mixing. It has a mixing capacity of 120 tons of liquid fertilizer every eight hours with one operator, company officials say. The mixing unit is skid mounted and is 18 ft. long, 8 ft. wide and 14 ft. high. The company announcement continues: "The unit will handle dry form potash, aqua ammonia, liquid urea-ammonium-nitrate, phosphoric acid and other liquid fertilizer additives. It can use anhydrous ammonia

Send me information on the items marked:

- ☐ No. 5531—Cleanser
- ☐ No. 5535—Tank Brochure
- ☐ No. 5542—Pallet Bag
- ☐ No. 6460—Bag Design
- ☐ No. 6461—Blight Booklet
- ☐ No. 6462—Insecticide
- ☐ No. 6463—Burn Treatment
- ☐ No. 6466—Bagging Cost Kit
- ☐ No. 6472—Nitrogen
- ☐ No. 6473—Seed Treating
- ☐ No. 6474—Liquid Unit
- ☐ No. 6475—Film
- ☐ No. 6476—Soil Handbook
- ☐ No. 6477—Fertilizer Hose
- ☐ No. 6478—Feeder, Seeder
- ☐ No. 6479—Tanks
- ☐ No. 6480—Herbicide
- ☐ No. 6481—Insecticides

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P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

direct batch mix into complete uid fertilizers without converting echanisms. Accurately formulated uid fertilizers can be automatically mpounded quickly in exactly meter- amounts." Secure more complete tails by checking No. 6474 on the upon and mailing it to Croplife.

o. 6461—Blight ooklet

An illustrated booklet on the rec- mition and treatment of early and e blight in 18 different crops is ing made available by the Chem- m Division, Chemical Insecticides rp. Also desribed in the booklet the company's new fungicide devel- ed for blight treatment. Secure e booklet by checking No. 6461 on e coupon and mailing it to Croplife.

o. 6466—Bagging ost Kit

A new "do-it-yourself" packaging ork kit, designed to help fertilizer anufacturers figure bagging costs, available at no charge from Union ag-Camp Paper Corp. The kit con- ins tables for determining the labor sts per ton of material and per housand bags at varying production tes. Also enclosed is a chart which gures the cost of multiwall bag losing materials (cotton thread, yon thread and filter cord) as well a bag cost comparison sheet. Se- re the kit by checking No. 6466 on e coupon and mailing it to Croplife.

o. 6463—Treatment or Burns

A product called by the trade ame, G-63 burn relief spray, is be- g produced by the General Scien- ific Equipment Co. It comes in a ush-button spray bomb and the roduct is claimed to treat burns and rotect the skin with a cooling emol- ent film. Secure more complete de- ails by checking No. 6463 on the oupon and mailing it to this publica- ion.

No. 6460—Bag Design Trends

The part played by redesigned fer- ilizer bags in increasing sales is mphasized by the Percy Kent Bag Co. Information concerning trends nd sources in bag design develop- ents is available from the company. Company officials state that ferti- izer brand identification and brand elling are important in convincing he farmer to choose a particular roduct. Display advertising on the roduct package offers a major op- ortunity to the fertilizer manufac- urer, it is claimed. Products in new ontainers—with the design revamp- d to look cleaner, brighter, more odern and with the product bene- it clearly pictured—enjoy an un- istakable sales boost, it is stated. Secure more complete details by hecking No. 6460 on the coupon and ailing it to Croplife.

No. 5531—Cleanser

Increased wetting properties and reater cleansing power are claimed or Pennsylvania Salt Manufacturing Company's product called General Manual Kleanser. Known as a farm nd dairy cleanser, it has been re- ormulated to include nonionic and nionic wetting agents and additional olyphosphate content to make it ore effective in hard water areas. The product is available in 5-, 10- nd 25-lb. farm packages and 125- nd 350-lb. bulk sizes. For more com- lete details check No. 5531 on the oupon and mail it to this publication.

No. 6462—Insecticide

A new liquid insecticide, trade- amed Drinox, has been placed on he market by Panogen, Inc. The roduct contains aldrin and is laimed to be "effective in protect- ng newly planted seed and young eedlings from attack by wireworms, seed corn maggots and a variety of other soil-dwelling insects." It is recommended for treating wheat, oats, barley, rye, cotton, corn and sorghums. Seed germination is not harmed, it is claimed, and the product comes as a true solution (not a slurry), ready to use without mixing or diluting. For further information check No. 6462 on the coupon and mail it to this publication.

No. 5542—Pallet Bag

The St. Regis Paper Co. has developed a "pallet bag" designed to give a "squared-off" package which permits better palletizing and improved appearance of the container. The company announcement states: "The length of the pasted bag is shortened for improved pallet loading and the size of the gussets is increased to obtain the same volume. A small sleeve and large valve prevent siftage even though the width of the gussets is increased. Light scoring along the edges adds to the square shape of the bag. After the bag is filled, it moves on a conveyor to a vibratory flattener which flattens the bag and contributes to easy palletizing." For more complete information check No. 5542 on the coupon and mail it to this publication.

Flood Prevention Impossible for New England, Expert Says

HAMDEN, CONN.—"There is no such thing as flood prevention for New England" a conservation expert declared in a talk at the annual field day of the Connecticut Agricultural Experiment Station.

Flood "protection" is a possibility, however, Paul B. Sears, professor of conservation at Yale, said.

"Effective protection can come about only from improved land use and management based on a better understanding by the general public of the relation between water, land and ground cover," he said.

People must remember that it is impossible to predict how much rain will fall at a given time and place. "Fifteen inches or more of rain in three days would be expected statistically only once in a thousand years or more," he stated, "yet we had such rains twice in one season last year."

Reservoirs are of little use in flood prevention in New England, he asserted. Reservoirs must either be empty or have plenty of reserve space, but the choice of reservoir sites in New England is being used mainly to store water for use. The cost of building reservoirs on flood plains would be prohibitive because of the urban and industrial developments occupying the sites, he said.

Fertilizer Sales in Minnesota Show Decline in 1955-56

ST. PAUL—Fertilizer sales in Minnesota during the year ended last June 30 totaled 361,325 tons, compared with 370,923 tons the previous fiscal year, according to the state department of feed and fertilizer control.

The 1955-56 total included 295,708 tons of mixed goods and 65,617 tons of materials, compared with the 1954-55 breakdown of 289,118 tons of mixed fertilizer and 81,805 tons of materials.

Among leading grades of mixed goods in 1955-56 were 5-20-20, 65,867 tons; 6-24-12, 62,070 tons; 0-20-20, 23,670 tons; 4-16-16, 22,757 tons, and 8-16-16, 14,909 tons.

Included in the sales of materials were 25,834 tons of concentrated superphosphates, 13,694 tons of anhydrous ammonia, 6,811 tons of ammonium nitrate, 5,506 tons of nitrogen solutions, 4,378 tons of normal superphosphates and 3,718 tons of muriate of potash.

RINGING THE cash register

Merchandising Hints for The Retailer

8 Common Complaints

Broadly speaking, customer complaints can be divided into eight basic groups. They are as follows: (1) Faulty products which fail to do the job claimed they will do. (2) Deficiency in quality and failure to adjust payment satisfactorily. (3) Delayed delivery. (4) Wrong products. (5) Damaged products. (6) Office errors in billing charge accounts. (7) Resentment of credit-collection methods. (8) Dissatisfaction with sales people. A legitimate complaint can usually be handled satisfactorily if the store's personnel has the proper attitude. If store personnel resents complaints, instead of accepting them gracefully, the customer is bound to recognize it. Results are usually bad when a complaint is accepted resentfully. Assuming that most every complaint is justified, sales personnel should be glad to handle it, listen while the customer has his complete say and then handle it as cordially as possible. Only then can the customer be expected to leave the store, satisfied that his complaint was justly handled, and become a booster of the store by telling friends how cooperative the salesman was in making an adjustment.

Don't Wait Too Long

Every day older an overdue account becomes, the more it depreciates in value. This is, the chances of collecting gradually diminish to the point where an account eventually becomes totally uncollectible and worthless.

TIRED... TRYING TO OUTGUESS 'EM

PRIVATE LABELS *is the answer!*

If you're "dog tired" of losing repeat orders to competition. If you figure you must take a beating and like it. If you're "fed-up" with competition "hounding" you into exhaustion . . . then it's time to investigate private labeling.

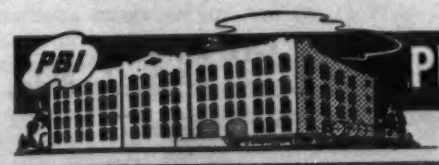
You can "perk-up" and open your eyes to a brighter future. No longer is it necessary to try to sell the same lines as your competition.

You *can capitalize on* your established name in *your* own market.

Through private labeling *you* are assured an exclusive on *your* high quality line in *your* market . . . *Your* customers can't reorder from anyone but YOU.

PRIVATE BRANDS, Inc. is ready with a complete service to help you increase your business. It will pay you to investigate today!

Write, wire, phone for particulars.



PRIVATE BRANDS, INC.

300 South 3rd St. Dept. CL-7
Kansas City, Kansas

if your product is marketed through distributors and dealers...

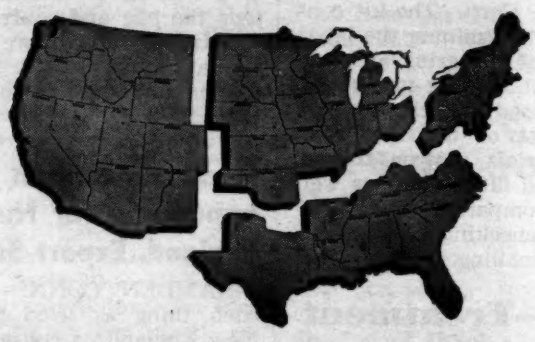
Croplife is for YOU!

AN IMPORTANT EXCLUSIVE is available to advertisers whose agricultural chemical products are marketed through distributors and dealers. It is Croplife's unique *regional crop-area circulation plan*, carefully developed to fill an urgent need in the industry's marketing and advertising facilities—the need of advertisers to reach the dealers and distributors and farm advisers with an up-to-date story of their products and their consumer promotion plans.

THIS IS THE PLAN: In addition to the weekly circulation to manufacturers and formulators, Croplife is distributed on a regional crop-area basis to the dealer-distributor-farm adviser segment of the industry. The merchandising section in each issue of Croplife is specifically edited for dealers in one specific region. This carefully planned editorial formula insures intense reader interest.

More than 15,000 DEALERS, 1,700 custom operators and 1,000 farm advisers receive the issue of Croplife specifically edited for their regional crop-area once each four weeks. The mailing schedule for this group covers consecutively four geographic regions of the United States (see map) with one of four regional dealer issues: The Northeast Dealer Issue, the South Dealer Issue, the Midwest Dealer Issue or the West Dealer Issue. Each week Croplife goes to more than 4,500 dealers, distributors and farm advisers in one of these four regional crop-areas.

THIS CIRCULATION EXCLUSIVE is available only through Croplife. The regional crop-area circulation to dealers has been carefully developed to fit the particular needs of the agricultural chemical industry. Many individual products have been developed and approved and are being sold for use on a specific crop; therefore, marketing and promotion plans must be directed specifically to the appropriate crop-area. Croplife's dealer circulation developed along crop-area lines offers advertisers the *most flexible medium possible*, designed to give "direct-hit" coverage for specific messages without the higher cost of a larger-than-necessary circulation on an inflexible nationwide basis. Advertisers interested in reaching dealers in more than one region can do so easily and economically with a selective advertising schedule.



In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas

HOW TO USE THE PLAN: Select the regional crop-areas—Northeast, South, Midwest or West—in which you need to reach dealers, distributors and farm advisers with the up-to-date story of your products and your consumer promotion plans. Plan your message to inform and to educate this group. Then, select the appropriate issues of Croplife to carry your advertisements. Croplife's printed circulation statement outlines the four regional crop-areas in detail and gives the issue-by-issue mailing schedule. Ask us for a copy.

AND NOW—4000 more selected dealers have been added!

BEGINNING IN 1956 this important circulation exclusive became even more valuable to advertisers who are reaching dealers through the pages of Croplife. An additional 4,000 selected dealers handling agricultural chemicals are now receiving the issues of Croplife edited specifically for their crop-areas. One thousand dealers in each regional area were screened and verified and have been added to Croplife's controlled circulation plan, bringing the total number of dealers, distributors and farm advisers receiving Croplife to more than 18,000. Each week Croplife goes to more than 4,500 of these interested readers in one of the four regional crop-areas.

MAKE YOUR PLANS NOW to capitalize on this unique advertising opportunity, exclusively through the pages of Croplife.

WRITE-WIRE-PHONE for the full story of your advertising opportunity in

BPA
Member of Business Publications Audit

Croplife
sales
...for richer fields
published by **The Miller Publishing Co.**

NBP
Member of National Business Publications

NEW YORK	CHICAGO	KANSAS CITY	MINNEAPOLIS
551 Fifth Ave.	2272 Board of Trade Bldg.	612 Board of Trade Bldg.	2501 Wayzata Blvd.
MUrray Hill 2-2185	HArrison 7-6782	Victor 2-1350	FEderal 2-0575

FARM SERVICE DATA
Extension Station Reports

Most Maryland farmers are not getting out of their pastures and hayland anywhere near what they should, University of Maryland agronomists believe.

Both the total production of roughage per acre and the quality of the production are too low. The present average yield of Kentucky bluegrass and white clover used as permanent pasture is one ton of hay dry forage per acre when it should be 2.5 tons. Orchard grass or tall fescue and Ladino is averaging 1.8 tons; it should be 3.5 tons. The present alfalfa yield of 2 tons could be doubled to 4 tons.

Charles Ellington, University of Maryland extension agronomist, points out most farms could support many more money-making livestock if production were what it could be. Also when roughage is poor and low in protein, more grain and protein supplements are needed to properly balance the ration. This costs money.

One of the big reasons for low production is not enough lime and fertilizer. Dr. Frank L. Bentz of the soil testing service, reports that about half of all the soils from which samples are analyzed need more lime.

Dr. Bentz estimates that the average hay and pasture acre receives less than 100 lb. of fertilizer per year.

He feels that somewhere between 300 to 400 lb. per acre would be a desirable average.

Considerable of our hay and pasture lands are occupied by low producing species and varieties. Weeds and over-grazing hamper the production of others. Dr. Ellington says that it is uneconomical to continue with grasses which do not give the best returns even in more favorable years.

★

"Blackpoint" or discoloration of the embryo ends of seed wheat is quite common this season but does not harm the seed. The condition is also found in seed barley. Moist weather at time of seed formation is given as the reason why blackpoint is more noticeable this year. This information comes from Cornell and New York University seed analysts at the New York State Experiment Station at Geneva.

"Discoloration from blackpoint is sometimes mistaken for smut," say the station scientists. "But whereas smut is very pathogenic, blackpoint is not in the least harmful to the seed or to the growing plant."

★

Farmers can get more "mileage" out of old, rundown pastures by starting a renovation program this fall.

When such a program is teamed up with plenty of fertilizer, forage yields can be doubled on some fields, reports the Middle West Soil Improvement Committee. This, in turn, can mean a higher meat or milk output per acre and lower costs of production.

Calves on renovated pasture made 60% better weight gains than those on old, unfertilized fields in Minnesota tests, says the committee. The fertilization program on the renovated pasture included four tons of lime per acre and 300 lb. of fertilizer.

★

Farmers in West Virginia last year converted more than 6,917 acres of cropland to grass and trees, according to a summary of conservation accomplishments released by L. L. Lough, state conservationist for the U.S. Soil Conservation Service.

Mr. Lough stated that this shift, which has taken place as part of the regular soil and water conservation program, totaled more than 26,629 acres in 1954 and 1955 combined.

The soil bank conservation reserve goal in West Virginia for 1957 is 110,000 acres, out of a national 1957 goal of 20 million acres of cropland to be converted to grass and trees. Most recent conservation needs surveys indicate that in the interest of good land use, at least 486,466 acres of land now in crops need to be placed in permanent grass cover and 65,314 acres of present cropland should go in trees, Mr. Lough said.

★

Prices farmers pay for all crop production items have increased 100% in the past 30 years, whereas the price of fertilizer has increased only 17%, according to a bulletin by the University of Wisconsin.

"These figures indicate at least one reason why many farmers have found it profitable to use heavier applications of fertilizer, particularly during the past 10 years," says the bulletin.

The upward trend in fertilizer consumption, says the Wisconsin bulletin, has been influenced by: 1—The low cost of fertilizers compared to prices of agricultural products; 2—research and educational programs; 3—recognition of the soil's increasing need for nutrients.

"Research has led to recommendations for increased use of fertilizer," says the bulletin. "Higher analysis fertilizers have tended to reduce prices through lower costs of handling and shipping. Research has also developed information concerning mineral requirements of crops and methods of supplying the needed elements."

OVER THE COUNTER

(Continued from page 9)

ers. In it are examples of how $3 to $4 per acre in increased crop values are returned for each $1 spent on fertilizer. Such examples are excellent educational tools to help the dealer.

It would be a safe assumption to state that the brochure will be educational for some bankers, too. Many bankers in agricultural areas are totally unaware of the benefits that the farmer can achieve with efficient fertilizer and lime usage. The brochure thus will be a valuable tool for educating farmers and uninformed bankers alike.

The Maine Bankers Assn. underwrote the brochure which was assembled by the department of agronomy of the University of Maine. It is a highly readable, stimulating publication, filled with pictures and deserving of wide distribution in Maine's agricultural areas. The work is a most worthwhile contribution by Maine bankers in behalf of agriculture and indirectly to suppliers and dealers of fertilizers and other farm chemicals.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The American Chemical Society was told at its 130th national meeting that if farmers would use fertilizers at levels recommended by state experiment stations, the extra income from this means would be more than government supports at 100% of parity. Dr. Russell Coleman, executive vice president, National Plant Food Institute, made the statement. Other speakers reported on tests made on various pesticides and plant foods at the Atlantic City, N.J., meeting.

Tests of aerial fertilization of forests were reported on by Rutgers University, New Brunswick, N.J. Applying a complete fertilizer on an 11-acre stand of red pine, caused the 28-year-old trees to mature more rapidly. Tests were made in cooperation with the Nitrogen Division, Allied Chemical & Dye Corp., New York. Fertilizer used was a 12-12-12 grade.

That a curtailment of shipping through the Suez Canel would not be likely to halt shipments of pyrethrum into the U.S., was the expressed opinion of USDA officials in Washington, when asked about this possibility. It was noted that since the pyrethrum flowers come from the Kenya colony and Belgian Congo areas of South Africa, that by-passing the canal would not add materially to the length of the sea-water route to the U.S.

The New England fertilizer conference held at Melvin Village, New Hampshire, brought out testimony from various speakers that the industry's future in the six New England states is promising. One economist visualized the level of fertilizer consumption reaching a plateau, but said that the ups and downs would be of a gentle type and not drastic in nature.

Massachusetts department of public health bacteriologists were making a thorough study to find possible additional insect vectors of encephalitis, or "Horse Sleeping Sickness," many cases of which have been reported in the area. Suspected mosquitoes are captured, quick frozen, pulverizd, and the material then inspected under electronic microscopes.

Nitrogen was found to be the limiting factor in USDA experiments with irrigation on cotton fields. When soil fertility is low, not much of an increase in cotton yields may be obtained from extra irrigation, it was found. But with the addition of adequate amounts of nitrogen, irrigation will aid greatly in the production of cotton, the announcement said.

Drouth in the New England states caused a crop loss of about $1 million, much of which was in the tobacco-growing area. Walter E. Piper, state marketing specialist, said that tobacco leaves are much smaller than usual and the leaf size was continuing to diminish due to the dry weather.

The Chemagro Corp. announced that it will build a new insecticide manufacturing plant in Kansas City at a cost of more than $2 million. George W. Hill, Jr., president of the firm, said that a total of 50 acres of land has been set aside for present and future needs. When in operation sometime next year, the new plant will produce guthion, an organic phosphate insecticide.

The Great Plains Agricultural Ammonia Conference held its meeting at Lincoln, Neb. Aug. 28-29, with 175 persons from 15 states in attendance. Speakers at the meeting emphasized that location, type of soil, rate of application, method and time of application are the most important factors to be considered in successful use of nitrogen fertilizers.

Results of experiments conducted with insecticides and fungicides in 1956, were chief topics of discussion at the summer meeting on Aug. 14-15, of the Ohio Pesticide Institute, held at Wooster, Ohio. Unfavorable weather conditions during much of the growing season made interpretation of many of the results difficult.

Scottish Agricultural Industries, Ltd., announced that it has under construction a new concentrated granular fertilizer plant at Leith, Scotland. The project will cost about $8.5 million when completed.

The U.S. Department of Agriculture announced that more than 550,000 agreements, covering over 12,300,000 acres of croplife, were signed under the 1956 acreage reserve program of the soil bank . . . The tenth annual Belt-wide Cotton Mechanization Conference heard speakers stress that every advantage must be taken of opportunities to lower production costs in order to keep cotton competitive.

Forecasts for cotton production in the U.S. for 1956 were down approximately 8% from last year, as the USDA crop reporting board made its forecasts in August. This year's yield was set at 13,552,000 bales, as compared to 14,721,000 bales harvested in 1955. Yields per acre were up, reflecting the effects of growing cotton on the best land, the use of more and higher analysis fertilizers, and other improved cultural practices, it was noted.

Tolerances for the fumigant, ethylene dibromide were proposed by the U.S. Department of Agriculture in order that this material might be employed in the Mediterranean fruit fly eradication program.

Monsanto Chemical Co. announced that it will build a new phosphoric acid unit at the Colorado Fuel and Iron Corp. plant in Pueblo, Colo. In cooperation with CF & I, the resultant phosphoric acid will be used in production of diammonium phosphate to be marketed under CF&I's trade name, "DAP".

Woonsocket Color & Chemical Co., Woonsocket, R.I., approved an expansion program for the firm's Nitro-Form agricultural chemicals division. Expenditures of from a half million to three-quarters of a million were authorized for the project. The Nitro-Form division will be split into a separate corporation for the purpose of sales and future expansion. Future plans call for the basic production of formaldehyde and urea formaldehyde slurries for the fertilizer industry.

MANAGEMENT PROBLEMS

(Continued from page 9)

the dealer maintain prices at a level which will produce a net profit, and will also show him what costs are out of line so that steps can be taken to reduce or eliminate them.

Fix responsibility for the cost control program: Someone must be responsible for a cost control program if it is to be successful. The program must be a regular part of that individual's duties and he must spend a considerable amount of time on it at regular intervals.

In many small businesses, this person will be the manager/owner himself. He must keep a constant watch on all operating expenses and attempt to reduce or eliminate those that are unnecessary or undesirable. He should realize that not all expenses are subject to reduction or elimination. Many are absolutely necessary and desirable in order to maintain and increase sales volume or to render customer services. It is those expenses which serve no useful purpose that must be eliminated. Usually a periodic analysis of expense items shows up weak spots where more money should be spent in order to increase sales or perform customer services.

Publicize the program: Any cost control program must have the cooperation of all employees to be fully successful. The person in charge of the program should call a meeting of the employees after he has outlined the program and completed his plans for it. Employees should be given a chance to express their own ideas and make suggestions as to how to control or cut out unnecessary expenses. It has been found that a large part of the worthwhile results of such programs are obtained more by the employees than by the person in charge.

For example, one farm store managed to cut expenses for floor sweep by almost $50 per month because an employee who had been sweeping the concrete floor found out that he did not have to cover the floor with floor sweep to a thickness of about 2 in. every time he swept out the building. This was one of those little items that can easily escape the attention of the manager. Several such items can add up to a large total of wasted money.

Maintain interest in the program: It is of vital importance for a cost control program to be on a continuous basis. The program itself will usually cost some money to start and keep going. If it is started one month and sidetracked the next, it will probably cost more than it is worth. One way to maintain interest in the program is for progress reports on savings obtained to be made at periodic intervals.

Nothing succeeds like success, and by the same token nothing will spur on a cost control program like seeing the results in a regular report. Such reports should be available for the employees as well as management.

Take an analytical approach: The best way to approach a cost control program is with the idea that operating costs can be reduced. This approach must be tempered with reason and common sense. It may do more harm than good to slash expenses without analyzing the reasons for having the expense in the first place. Before reducing or eliminating an expense it should be thoroughly analyzed. Is it paying for itself? Can a greater return be received by increasing the expenditure or by allocating it to some other area? Can it be entirely eliminated without at the same time eliminating a desirable service? These and other questions should be asked about each item under consideration.

Check Points

You should have certain checkpoints to guide your analysis of operating costs. Some of these are:

(1) Investigate one problem or item at a time rather than trying to cope with a large area. Cut the problem into small bits.

(2) Don't go overboard for new mechanical items which your budget cannot afford. Capital items increase depreciation expenses. Be sure that the capital equipment you buy will save because it lowers costs and increases efficiency.

(3) Analyze the various jobs that are being performed in the business. Is each being done in the most efficient manner possible? Can some jobs be eliminated or combined with others?

(4) Remember that small expense items are important. Just because an expenditure is small in amount is no reason not to consider it just as thoroughly as the large ones. Small expenditures add up to large total amounts in a hurry.

It is a common experience for businessmen who initiate a cost control program to bring to light other problems which need attention. These problems should be given attention but not at the expense of the cost control program. The program must be pushed continuously if it is to succeed.

Problems

Some of the common problems which often come to light when the program gets under way are:

(1) Credit policies: If the business establishes a good record system it will reveal the cost of extending credit. If accounts receivable are great and many of them of great age, the expense of maintaining them runs into large amounts. It may be wise to review your credits and collections policy. Is there a system for investigating the character, capacity and capital of those who seek credit? Is there a system for analyzing accounts which are overdue into groups, and then follow up on those which are over 25 days old? Is there a point of safety established where credit extension is stopped? What per cent of sales are bad debt losses? Is it necessary to extend credit or should you operate on a cash basis? All these questions and others must be answered satisfactorily before a good credits and collections policy may be established.

(2) Depreciation expenses: Are you charging depreciation of capital items against your operations? Some of the more common depreciable items are buildings, fixtures, equipment, machinery, trucks and cars. Depreciation expenses may not be paid "out of pocket" each year, but they are operating expenses nevertheless. If they are not considered, then you overstate your profits.

(3) Inventory losses: It is the usual thing for some merchandise to spoil, become obsolete or not sell. The losses incurred are operating costs and must be charged to operations. If these expenses are high the purchasing procedures should be examined. Are purchases made because of personal whims? Are discounts being taken advantage of? Are goods of inferior quality and poor value being bought? Are some purchases duplications of stock already on hand? Are purchases being made in such small quantities that the lowest prices and cheapest delivery costs are not available?

Are too many slow-selling items and too few fast-selling items being purchased? Is the records system set up so that you have the figures available to check the fast and slow moving items and know how much you should have on hand of each?

(4) Incidental expenses: It is not unusual for many dealers to pay many small, but frequent, expenses out of their pockets or out of the cash drawer without making a record of the items. These small items frequently add up to large sums over a period of time, and if no record is kept they are forgotten. As a result, profits are overstated. Some system should be set up to record all such expenditures.

A cost control program will not solve all the problems of the small businessman. It will, however, bring to his attention items that, if corrected, will increase his sales and at the same time make his business more profitable and enjoyable. He will derive a great deal of personal satisfaction and pleasure out of the fact that he is "on top" of his operating costs rather than being in the reverse situation. At the same time, such a program will afford him a greater opportunity to be of service to his customers and his community.

Sales

The problems posed by the necessity of maintaining or increasing sales volume probably receive more attention than all the other aspects of management combined. It is such a broad problem that I will make no attempt to consider more than two or three aspects which seem particularly pertinent to the feed, seed and grain business.

Pricing policies: Price cutting is "taking the easy way out" to make a sale. By price cutting, I do not refer to such things as lowered prices in order to sell slow-moving stock or where the dealer has made a good buy and therefore secured a price advantage over his competition, or lower prices to customers who buy in larger quantities. These kinds of low prices are justified in most cases and render a service to your customers.

By price cutting, I mean the practice of reducing regular prices to make a sale rather than practicing good sales techniques and selling the product on the basis of quality.

In the first place, the regular practice of price cutting cuts into the margin of profit and may lead to serious losses. In the second place, customers who buy strictly on price rather than quality are not good customers. The business cannot make anything on their trade and they are not repeat customers. They will usually buy where the price is lowest regardless of quality.

The best answer to the problem of meeting competition which practices price cutting as a regular thing is to outsell it on the basis of quality of product, service, and build a following of customers who will pay a fair price because they feel they will get a better value.

Product: In order to sell farm supplies the dealer must know the strong points of his product. He cannot assume that his customers know the qualities of his products because they do not. In addition to knowing his product, the dealer must also know the business and problems of the customer. In that way, he can become an expert adviser to his customers. Many of them will tend to come to him for advice on problems they run into in the course of their business and would not think of buying from someone else.

By knowing his products, the dealer can advise the customer which of them to buy and use in order to overcome particular problems faced by customers.

Service: It is my feeling that the best businessmen are those who seek profits through service, rather than profit for profit's sake. I do not mean that profits are not necessary because they are. But I do not think that a good businessman, if he analyzes himself, wants profits simply for the sake of making them. He also wants to feel that he is rendering a service to his community and to his customers. In this way he derives more satisfaction from his work than he otherwise would, and his customers will be more regular and happy.

What services can the dealer render that will bring him more regular and satisfied customers and thereby increase the profits of his business and the satisfactions he gains by operating the business?

The services which the dealer could perform are so numerous that I will attempt to mention only a few possibilities. I have already mentioned one—advising the customer on the problems which he meets.

Advertising Is a Service

It seems to me that the feed dealer is in a position to render a service through his advertising. Many of his customers live in rural areas where they cannot get to town on the spur of the moment. Could not the dealer advertise over the local radio station and include such things as the weather report, stock prices and other things that directly concern the customer as well as to advertise his products?

He could place a bulletin board in his store and operate an information service for the customers. If they wanted to sell or trade something, the dealer could write up a notice and put it on the bulletin board. This is one good way to attract customers to the store.

A regular newsletter from the dealer could be mailed on a weekly or monthly basis to all his customers as well as prospective customers, with a relatively small expense. This could include items of interest to the customer as well as advertising the dealer's products. There are any number of duplicating machines on the market today which cost as little as $150 to $200, which would print such newsletters. This would be money well spent.

Mimeographed cards announcing the arrival of cars of feed, fertilizers, bargains, etc., can be used in the same manner.

Another good method of building customer good will is to set up a follow-up system. If a customer asks for an item not in stock, take his name and address and let him know when you get it in stock. Also make personal and written follow ups on all customers and prospective customers through the practice of regular visits and postcards.

I have mentioned only a few services which can be used to build up a loyal following among your customers. I am sure that many dealers have already used them or know about them. There are many others that I have not mentioned. The important thing about any type of service is that it places the dealer's business on a personal basis with the customer.

You will note that the things I have mentioned about building sales volume call for the expenditure of money, while I concentrated on reducing such expenditures earlier. Although this may appear to be a Dr. Jekyll and Mr. Hyde performance on my part, I think that the whole idea of cost control and increasing sales volume can be summed up in this way: You have to spend money to make money, but when you spend it concentrate on spending it for things that will increase your sales volume and increase your customer service and cut out those expenditures which are wasteful.

Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

A little humpbacked man in blue shirt and faded overalls came into the Schoenfeld & McGillicuddy farm supply store, carrying a rolled up fertilizer sack, apparently about one fifth full. The man smoked an old clay pipe, and now he approached the railing which separated the firm's office from the display room. The man was Otto Engel, a retired mill worker. He set down the bag on the wooden railing and looked at Oscar Schoenfeld.

"Oscar," he said. "I brought back some fertilizer. I want you should take back this fertilizer I didn't use. I don't need it."

Balding, rotund Oscar, busy with figures at his desk, frowned. He looked disapprovingly at grey-mustached Otto Engel. "Take back fertilizer!" he echoed. "Ach, we never do that!"

Otto Engel bristled. "Well, why not?" he challenged. "By golly, when I buy paint at the hardware store, if I wind up with too much, Bebhardt takes back what I didn't use."

"Full can, of course!" Oscar said precisely.

"Ja, ja," Otto said sharply. "You would not think I would take back a half can, would you, maybe with paint streaks along side the can? I am not that crazy, Oscar."

"Ach, but fertilizer is not paint," Oscar said testily. "What's the matter with that fertilizer that you bring it back now yet?"

"You want to know the matter? You sold me too much, that's what?"

Oscar flushed angrily. "How can we figure exactly what a customer wants? He tells us what he wants to buy, and we sell it to him."

Otto Engel's lips tightened. "Well, you schnapps sippers are supposed to know more about fertilizer than me," he retorted. "How did I know this fertilizer would produce so many raspberries for me? But you and McGillicuddy should know, and you sold me too much. Now, I ask you to take back about 15 to 20 lb."

"The fertilizer produced too much?" asked Oscar unbelievingly.

Otto Engel puffed hard on his cold clay pipe, frowned as no smoke came from his lips. "Ja, sure, it produced too much. That bag of 10-10-10 must be awfully strong stuff. I bought a 100-lb. bag and some lime and dug most of it in around my bushes this spring. I couldn't get no manure for a coupla years, so I read your ad and tried 10-10-10."

"Ach, then you should be glad you got so many raspberries," Oscar snapped, disgusted with the customer's complaint.

"No, I am not," Otto persisted stubbornly. "The berries are twice as big as before. I pick and pick every day until my back almost breaks. Ja, there is berries standing all over the house and the old lady gets grouchier every day, she has so many to can. I give some to the relatives, and I give lots to the neighbors. But still more berries."

Oscar was too astonished to reply. Never before had a customer kicked about fertilizer in this manner. But finally he did say, "But couldn't you sell some to the stores?"

"I did sell eight crates," Otto said angrily, "but then my back got so sore from picking and I quit. My back even hurt so bad I had to go to an osteopath feller for a rub; $8 he charged me, by golly, and there went the profits for one crate."

"But maybe you could hire somebody to pick the berries for you," Oscar said practically, "and then you could sell them."

Otto Engel snorted his disgust once more. "Ja, then I have to sit out in the garden and watch that feller and make him pick enough so I can pay his wages, else I lose money."

"Maybe your wife could help," Oscar suggested. He was always the one to make the most of time or crops or opportunities — especially concerning money.

"No, no," Otto said irritably. "I had a hard enough time with her as it was. One day when I brought in 16 quarts she had just spilled a kettle of boiling raspberry jelly on the floor. Then when she see me with all the other berries, she just threw up her hand. 'Otto!' she yelled, 'I quit! I am going to visit Mother'."

Pat McGillicuddy had come in a little earlier and sat listening as Otto Engel talked.

"You know where my wife's mother lives, Oscar?" yelled Otto. "She lives in Colorado. Ja, I had to cash in a savings bond to pay her fare, round trip, too. Now, Oscar, are you going to take back this fertilizer and give me a refund, or are you going to keep on horsin' around and git me mad yet?"

At this moment, Pat McGillicuddy spoke up. "Otto," he said, "of course, we will give you a refund on that fertilizer you have left in that 100-lb. bag. Now, how would you like to get a refund and also keep the fertilizer?"

Otto Engel's grey eyes popped wide open. "Keep the fertilizer and get a refund?" he exclaimed. "Pat, are you crazy? What are you tryin' to do, make a fool out of me?"

Pat smiled and shook his head. "No, Otto, all you have to do is tell your story over again, so I can put it on my tape recorder. I want to play it for my customers now and then and so they can hear how our fertilizer produced such a big raspberry crop it almost drove you crazy."

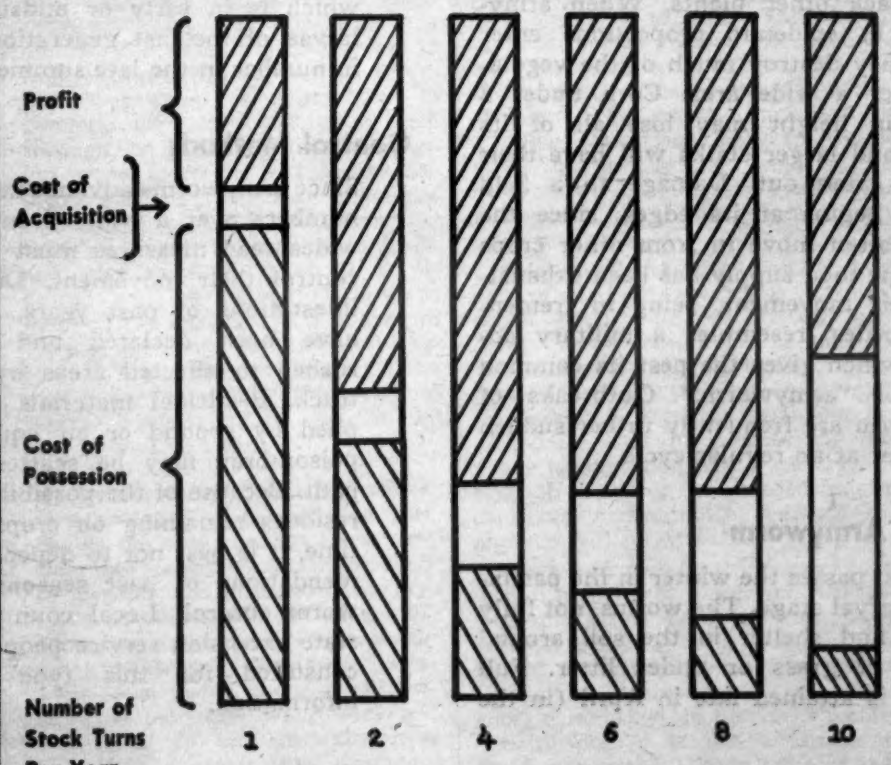
Otto Engel looked at Pat, then looked at the partly filled bag of fertilizer. "Well," he said, "I can use the refund, and the fertilizer I can use on my asparagus bed, maybe. Ja, it's a deal."

"Fine," Pat said, uncovering his tape recorder and plugging in the cord. "Sit down right here and I'll ask you some questions. It will work out fine, I think."

Otto Engel turned and gave Oscar a long, hard look. "Now why couldn't you make me a deal like this, Oscar?" he snapped, "instead of arguin' with me and gettin' me mad? You could take back the fertilizer like Pat did. Get wise to yourself, you—you cabbage!"

Oscar Schoenfeld straightened as though someone had kicked him in the pants. His face went white and his nose went up in the air in angry scorn. Without another word he marched into the warehouse, slamming the door behind him.

Turnover in Farm Supply Business



SLOW TURNOVER COSTLY—The above chart is applicable to most items sold in farm supply stores. The chart shows that merchandise which turns over too slowly increases the cost of possession. Too fast turnover—such as on popular or seasonal items—increases the cost of acquisition. The temptation to overbuy for the purpose of securing lower prices or extra discounts leads directly to slow turnover and higher cost of possession. Too fast turnover means skimpy stocks and frequent reordering in small amounts, increasing the cost of acquisition. Out-of-stock conditions also cause loss of sales and customer good will. The ideal turnover varies in different lines and businesses. For most retail stores the ideal turnover is between six and eight times annually. The above chart is adapted from one used by Fred Trullinger, Portland (Ore.) Seed Co. at a training school for feed and farm store operators.

Maine Farmers Win New England Green Pastures Contest

BOSTON—Hugh C. Briggs & Son of Turner, Androscoggin County, Maine, are New England sweepstakes winners in the 1956 Green Pastures contest.

Second place went to Roe and Richard MacDanolds of North Haverhill, Grafton County, New Hampshire, and third place to David Batchelder of Stowe, Vt.

Other New England winners were: fourth, Manuel J. Bettencourt & Sons, South Westport, Bristol County, Massachusetts; fifth, Ernest M. Loew, Hampton, Windham County, Connecticut, and, sixth, Manchester Brothers, Warren, Bristol County, Rhode Island.

The objective of the New England Green Pastures program is "to encourage a more prosperous dairy industry in New England, especially through the growing and use of quality forage for pastures, hay and silage through economic use and management of all farm resources."

Hugh C. Briggs & Son have an outstanding forage program to go along with their topnotch herd of registered Holstein cattle. The farm features lush stands of ladino clover and grasses, plus 13 acres of silage corn. Some 214 acres of the 500-acre farm are tillable and are used to feed a large dairy herd.

The forage acreage is divided into 28 plots for silage, pasture or hay. Some fields have been cut for silage, then for hay and also grazed. Two mow hay dryers, a large trench (or bunker) silo, and an upright silo help the Briggs produce top-quality hay and silage.

A heavy fertilization program pays dividends in more and better forage. In the past five years, Brigeen Farms has used 349 tons of lime, 1,500 tons of poultry manure, 2,700 tons of dairy manure, and 335 tons of commercial fertilizer of various analyses.

Hugh Briggs, Jr., is the active manager of the Holstein dairy operation. His father, Hugh, Sr., operates the B & B Dairy. His brother-in-law, Bill Morris, manages a Guernsey enterprise in cooperation with Hugh Briggs, Sr.

Start Made on Soil, Water Inventory In Massachusetts

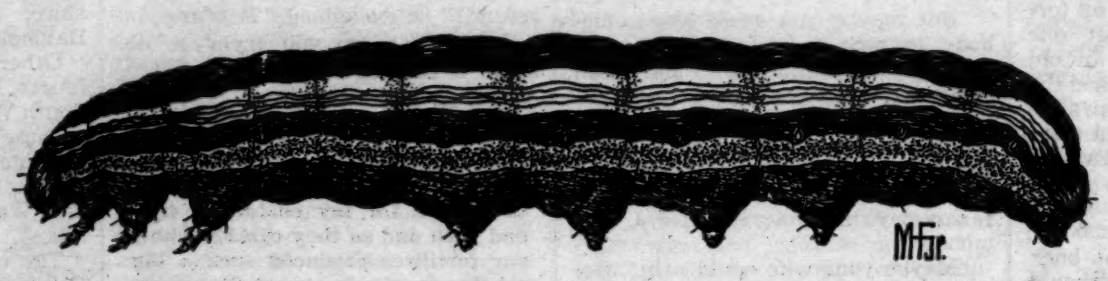
AMHERST, MASS. — Massachusetts conservation officials and other agricultural experts have started action on the Massachusetts phase of a national three year inventory of soil and water conservation needs.

A preliminary meeting of representatives of various state and federal agencies was called recently by Dr. A. B. Beaumont, Soil Conservation Service, Amherst, to start first action on the project. Eighteen other agencies are being invited to join in the program in an effort to enlist the widest participation possible. A second state meeting is planned for early October on this study—the first coordinated survey organized on a national scale.

The objective of the three year program is to obtain information necessary in providing adequate conservation of the nation's soil and water resources. As pointed out by Dr. Beaumont, there is a need for a systematic collection of facts for each county regarding resources, the problems in their use, and an estimate of the measures necessary to maintain and improve their service in line with national objectives.

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



Yellow-Striped Armyworm

How to Identify

This bug, illustrated above, is distributed throughout the U.S. and Canada, as well as in other countries. Full grown, the armyworm measures about 1½ inches in length and is of a general greenish-brown color. The lengthwise stripes give the worm its name and also provide the most convenient distinguishing characteristic. Young worms feed at night and remain hidden by day, thus their presence may be unknown until considerable damage is done to a crop.

Damage Done by Armyworm

The armyworm attacks grass crops, particularly timothy, millet, small grains and corn when the plant is not fully grown. Under stress of hunger, it will also attack other plants. When armyworms in epidemic proportions enter fields, they destroy much of the vegetation over a wide area. Corn under 8 inches in height may lose all of its leaves, and larger stalks will have their centers eaten out. Damage to a field usually begins at its edges, since the worms often move in from other crops where the food supply has been exhausted. Their movement, being in tremendous hordes, resembles a military advance, which gives the pest its common name of "armyworm." Outbreaks of armyworm are frequently rather sudden and occur at no regular cycle.

Habits of Armyworm

This pest passes the winter in the partly-grown larval stage. The worms, not fully grown, find shelter in the soil around clumps of grass or under litter. Full growth is attained late in April (in the latitude of central Indiana) and they pupate just below the soil surface. With cool weather, they remain in the pupa stage for two weeks or longer, then turn into brownish-gray moths which are good fliers with a wingspread of about 1½ inches. However, these moths fly mostly at night, remaining hidden by day. Females lay eggs in rows or clusters on the lower leaves of grasses, and the young worms which hatch are pale green in color and rely on a looping type of crawl for locomotion. Upon becoming full grown, however, they reach their longest measurement of approximately 1½ inches. Entering the ground, these worms change to the pupal stage and emerge as moths in from two to three weeks. There are about three generations a year. The most extensive damage is done by the larvae of the first generation, which is in early or midsummer. The larvae of the last generation are many in number in the late summer.

Control Methods

Since armyworms advance in tremendous numbers over a wide "front," fast and widespread measures must be taken to control their movement. During heavy infestations of past years, emergencies have been declared and insecticides rushed to affected areas by plane and truck. Pesticidal materials may be applied by ground or air equipment and poison-bran may be scattered in their path. Because of the possibility of illegal residues remaining on crops at harvest time, it is best not to depend on recommendations of past seasons for armyworm control. Local county agents or state extension service people should be consulted for this type of specific information.

Drawing of Yellow-Striped Armyworm furnished Croplife through courtesy of the artist, Marvin Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

Position of Pesticide Trade Relative to Miller Amendment Pointed Out by Entomologist

By DR. GEORGE C. DECKER*
Entomologist, Illinois Natural History Survey
Urbana, Illinois

Public Law 518 (the Miller Bill) is in reality merely an amendment to the Food, Drug & Cosmetic Act of 1938. It does not alter the philosophy or fundamental principles of the original Act, but rather, it represents an attempt to simplify and expedite the procedures for establishing tolerances which government and industry alike found so confusing, expensive, and otherwise objectionable in the prolonged hearings of 1950-51.

We have made a lot of progress since the passage of the bill in 1954, and while there are some rumblings of discontent, by and large there seems to be general agreement that the bill has been working out as well as could be expected and with a minimum of dissatisfaction.

What has the bill accomplished? (1) In the first place it has given us a set of guideposts so that in the case of many pesticides and many crops we now know exactly where we stand. For years research workers and farmers operated in an atmosphere of uncertainty and at times apprehension or fear. When the Miller Bill was passed, there were no official tolerances in existence, despite the fact that the Food, Drug & Cosmetic Act of 1938 contained provisions for the establishment of tolerances for pesticide residues on food crops.

Today we have tolerances or exemptions from a tolerance requirement covering the use of from 1 to 30 or more pesticidal chemicals per crop for roughly 100 crops, and a total of about 100 pesticidal chemicals are involved.

(2) We now have reasonable assurance that as rapidly as the required data can be accumulated, additional tolerances can be obtained without undue delay.

(3) Prior to the passage of the Miller Bill each request for a tolerance had to be accompanied by convincing evidence of necessity for use. This requirement has been replaced by the certification of usefulness by the Secretary of Agriculture, which provides some assurance that performance data will be reviewed and passed upon by an agency in which the majority of the staff have a working knowledge of agricultural practices and problems.

(4) Provisions for referral of unresolved disputes to a panel of scientific experts provides a reasonable degree of protection from possible unjustifiable arbitrary decisions or rulings.

What are some of the unsolved problems? To assume that all of the many complex problems involved could be solved in a year or two would have been optimistic and unrealistic indeed. Thus, it is not surprising that we find ourselves confronted with a variety of minor and some major unanswered questions.

Adoption of the principle that adherence to existing registered labels would present no serious problems in 1956 enabled us to get through the present crop season with a minimum of confusion but still leaves some pesticide uses in an uncertain position for 1957. Some states accepted the "Read and follow the label" declarations at face value, but others were inclined to make no recommendations not covered by an established tolerance, and this created some confusion and misunderstandings.

Some currently approved uses are not yet covered by tolerances and in some cases where registration was granted on the basis of preliminary data indicating no residues would be present on the harvested crop, additional data may be needed to remove any doubts that may still remain and to assure continued label approval. In most such cases available performance and toxicological data are adequate and only additional residue data will be needed to demonstrate the absence of a residue or establish a tolerance. Very often much of this data could and should be obtained as a by-product of current state or federal research plots.

There are many potential uses for pesticides not yet fully explored or developed. This is particularly true in the case of minor crops or limited uses where industry is hesitant to finance the high cost of collecting the required data because of the limited sales potential. Closely related to this are the occasional cases of interplanted crops where one crop has a tolerance and the other does not. Here again, performance and residue data will be the major requirements, and in this case responsibility for the development of the data may justifiably rest squarely upon the shoulders of the research workers and agencies most concerned with developing a new control measure that will have a very necessary, but at the same time a very limited application.

The multiple tolerance situation in which different tolerance levels are established for the same pesticidal chemical on different crops is confusing and in the opinion of many is indefensible in most cases except where great differences in the moisture content or the extent to which certain commodities appear in the diet justify suitable adjustments. In fact, this practice appears to represent a reversal of policy, for, in general, the tolerances established through the medium of the 1950 hearing were more or less across the board for the fruits and vegetables considered, e.g.: "A tolerance for DDT of 7 parts per million on fruits and vegetables on which it is required will be without hazard to man." Thus DDT got a tolerance of 7 p.p.m. on about 50 fruits and vegetables with little or no apparent regard for data indicating required residue levels might be lower in the case of several crops.

The across-the-board tolerances thus awarded many materials following the 1950 hearings allow considerable leeway which can be used to expand and otherwise modify spray schedules without danger of exceeding tolerances. In contrast, many materials developed later were often tested under conditions of restricted usage where residues were held to unrealistically low levels. As a result they are now handicapped and have little or no flexibility in their use because they were awarded a tolerance based largely upon apparent residue requirements rather than safety. In many cases the experiments reported were not designed to attain the best or in some cases even adequate control of the pests involved.

These inequities are exceedingly embarrassing to research and extension workers and are difficult to explain to the farmer. In looking to the solution of this problem we can only urge that where the margin of safety is adequate, serious consideration be given to the establishment of tolerances at levels that will allow for some flexibility in control practices to meet the variable contingencies that are inevitable.

The interrelated meat, milk and forage residue tolerance problems are most confusing and most in need of an early practical solution. Currently the farmer is in a position where he must tolerate sizable losses that could be eliminated or risk running into conflict with the law. Prolonged indecision, which in this case amounts to complete prohibition, can only aggravate the problem.

Unjustifiable prohibition of the use of insecticides has no more chance of protecting meat and milk than the Volstead Act had of enforcing temperance. Given no alternative, the farmer will tolerate continuing losses just so long, and he will then adopt some remedial measures. Without help and guidance, the steps taken may be the worst, not the best or the safest. Hence it is urgent that some decisions be made at the earliest possible date. No one will question the desirability of holding residues in milk to a minimum, but it is becoming increasingly evident the maintenance of a zero tolerance for all pesticides is impractical and that the promulgation of safe tolerances for at least a few materials will encourage the use of greater discretion in the choice of pesticides where dairy animals are involved.

It would also seem that available data should justify the early establishment of tolerances for several pesticides in meat. This would set at least general guideposts that would aid in unraveling more of the problem.

The question of tolerances for pesticide residues on forage crops is a knotty one. A very large percentage of all feed and forage crops never leaves the farms on which they are produced, and therefore tolerances a'one are hardly the answer to this problem. Here it would seem the judicious application of the Insecticide, Fungicide and Rodenticide Act offers the greatest promise of a practical solution of the problem. We have used label warnings such as "Do not feed to dairy animals or animals being finished for slaughter" with fair success, and the efficiency and effectiveness of this device could be greatly improved by a strong educational program which could be successfully launched as soon as we have a few established guideposts, i.e., official tolerances on meat and milk.

To protect the purchasers of hay and other forage crops labeling might add "and treated feed and forage crops should not be sold or removed from the premises." Attempts to wholly prohibit many valid and practical uses for pesticides on all forage and feed crops on the vague presumption that a small fraction of the crop so treated might conceivably eventually reach dairy animals will prove futile.

Where do we go from here? It would seem that once the usefulness and safety of a pesticide have been established to a point where it had literally dozens of approved uses and a score or more of tolerances established, in instances where toxicity per se is not a dominant factor our over-all knowledge of the characteristics of the pesticide and its residues would justify the addition of some new uses and tolerances on the basis of expert opinion or at least with greatly reduced data requirements.

We must strive to simplify rather than further complicate our pest control recommendations and practices. Today even the best informed research and extension specialists find it difficult if not indeed impossible to prepare recommendations that will adequately protect several important crops and at the same time fully comply with all labeling and tolerance requirements. Furthermore, if all of the necessary ifs and ands are inserted, the document becomes unintelligible to the average layman for whose use it was prepared.

Dr. George C. Decker

If we continue to further complicate the making of pest control recommendations by pyramiding exceptions based upon unrealistic rules and regulations, agricultural specialists will have to abandon the time-honored practice of preparing practical spray schedules and pest control recommendations.

As is so often the case, the major differences of opinion that have arisen are traceable to variations in the interpretation of the wording of the act and the regulations promulgated for its administration. There is but one solution to such a dilemma. The reconciliation of divergent points of view presupposes mutual understanding, mutual respect and cooperation. These are not attained through heated arguments, arbitrary rulings or courts of law, but can be attained only through a wholesome, well-tempered exchange of viewpoints. As a result only the background of the picture is out of focus and those involved in controversy need only to develop perspective—the details are already too sharply defined.

Perhaps we might all do well to examine our individual positions and strive for a better understanding of the other fellow's problem. In any case, we should allow adequate time for the present law to fully demonstrate its strength and its weaknesses before advocating further amendments or resorting to premature court actions. In the meantime, let us pool our combined efforts in the common interest of making this law work smoothly and effectively.

*Presented at the annual meeting of the National Agricultural Chemicals Assn., Spring Lake, N.J., Sept. 7, 1956.

Texas Building Dedicated

COLLEGE STATION, TEXAS—The Guy W. Adriance Horticultural Laboratory was dedicated on the Texas A&M College campus here recently. The $90,000 food processing laboratory was named for Dr. Adriance, head of the A&M department of horticulture since 1935.

Dedication ceremonies were a highlight of two meetings on the campus—that of the Texas A&M College System board of directors, and of the Texas section of the institute of food technologists.

MANAGEMENT EXPERT DIES

FT. COLLINS, COLO.—Ralph L. Partridge, Sr., 69, retired official of Great Western Sugar Co. and an authority on farm management, died here recently. Operating his own management firm, he handled the affairs of farms in northern Colorado and Nebraska.

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

LONDON—Rapid progress is being made by the fertilizer industry in Israel, a country which needs to develop its agriculture to as near a state of self-sufficiency as it possibly can. The troubled political situation in the Middle East makes this a matter of urgent necessity. So the government, mindful of the scientific advances made by the fertilizer industry, is willing to pour money into capital investment.

The Israeli government already holds 50% of the share capital in Fertilizer and Chemicals Co., one of the most important producers in the Middle East. This concern is growing rapidly, aided by American know-how.

In the drive to help the country produce all its requirements of fertilizers, the company, in the first six months of 1956, contributed more than 45,000 tons of superphosphate, 2,000 tons of potassium sulfate and over 8,000 tons of ammonium sulfate. Not only did the company supply the domestic market, it moved into the export field to provide Israel with much needed foreign currency. Sales of superphosphate in foreign markets during the first half of this year totaled nearly 4,000 tons together with 1,550 tons of potassium sulfate. These sales represent a cutback from the 1955 sales records because the local market is now making even greater demands.

The company's research staff is now making experiments with anhydrous ammonia and aqua ammonia and in this endeavor it is receiving the cooperation of the government. Preliminary reports indicate encouraging results.

The commercial production of dicalcium phosphate began earlier this year, but due to the difficulties in obtaining sufficient hydrochloric acid the current output — about 250 tons a month — is far short of the plant's rated capacity of about 665 tons a month. The output is lifted by the local market.

The Kuhlmann superphosphate plant, in operation since 1951, is now producing about 120,000 tons a year which covers the local demand and leaves up to 15,000 tons a year for export. The output of potassium sulfate is now 500 tons a month. Only one furnace is in operation, and it is reported that some technical difficulties have been met, due to the corrosive effect of hydrochloric acid, a by-product of the process. Engineers and research men are working on the problem.

Fertilizer and Chemicals Co. recently started up a new ammonia plant near Haifa. Invested is $2.5 million in foreign currency together with a still larger amount of Israeli capital. Much of the equipment came from the U.S. and was obtained by means of a loan by the Export-Import Bank in Washington. Aiding in the design and erection of the plant were members of the staff of the Chemical Construction Corp. of New York, trade sources say.

Ammonia output is expected to be 15,000 tons a year and ammonium sulfate production 45,000 tons. This amount of ammonium sulfate is just enough to meet the domestic need. Plans had been made to divert some of the production into the export market, but local agriculture is advancing so rapidly that there is none to spare at present. Fertilizer and Chemicals Co. uses 97% of the ammonia production in the manufacture of fertilizers.

Slow progress is reported at the Dead Sea Works, now under the company's management. There have been several snarls and these will have to be eliminated before the capacity expectation of 6,000 tons a month can be reached. New machinery has been in operation since March but the abnormally cold spring has held back the evaporation of the carnallite pans. The production of potash has fluctuated around 3,000 tons a month.

More plans are being made for development; Israel is likely to become of increasing importance in the world export market, observers declare.

Canadian Losses

Weeds this year will be responsible for greater grain crop losses in Western Canada than all other crop pests combined, according to the Line Elevators Farm Service.

Chiefly responsible for the losses will be Canada thistle and perennial sow thistle. The average loss from weeds in the prairie provinces is $1,000 per farm. And on farms heavily infested with thistle the loss could be even heavier, the report notes. One observer says that in Manitoba and Saskatchewan the situation has now neared disastrous proportions and something must be done.

A combination of cultivation and chemical control has been recommended to producers. Spraying of cereal crops with 2,4-D ester gives effective top growth control and greatly reduces crop losses from sow thistle. MPC is much more effective in controlling, but not eradicating, Canada thistle than 2,4-D, the service reports.

One government weed control official, who was responsible for estimating the thousand-dollar loss at each farm, says the total loss of grain crops due to weeds is no less than $255 million a year in Canada. This was in 1953. Looking at the other side of the picture, a later study, made in 1955, reveals that the direct saving which resulted from the use of herbicides was about $56 million or between $4 and $5 for every dollar expended.

Not Taking Advantage

Some experts contend that the Canadian farmer is not taking advantage of scientific progress in the field of chemical control as much as he should. Yet last year, wheat, Canada's most important cash crop, received first consideration and 43% of the acreage seeded was treated with chemicals against only about 25% in the case of coarse grains and flax.

Not unexpectedly, the estimated percentage saving in the case of wheat, largely seeded on summer fallow—was less than in the case of oats and barley or flax. Wheat showed a 10% saving against 20% for oats and barley and 40% for flax.

Government officials and private firms engaged in the grain business are telling farmers that they could make more profitable use of herbicides and that advantage should be taken of the great progress made by the agricultural chemical firms in the past few years.

Indian Usage

The government of India is continuing its educational program to persuade farmers to make greater use of fertilizers to increase crop production.

In order to achieve a consumption target of 1.8 million tons of nitrogenous fertilizers in terms of

(Continued on page 23)

Books on Fertilizers And Their Use

APPROVED PRACTICES IN PASTURE MANAGEMENT (1956)
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Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trade-element plant foods. 208 pages, 106 illustrations, cloth bound $3.00

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Dr. Harold B. Tukey

Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages $5.50

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Dr. Vincent Sauchelli

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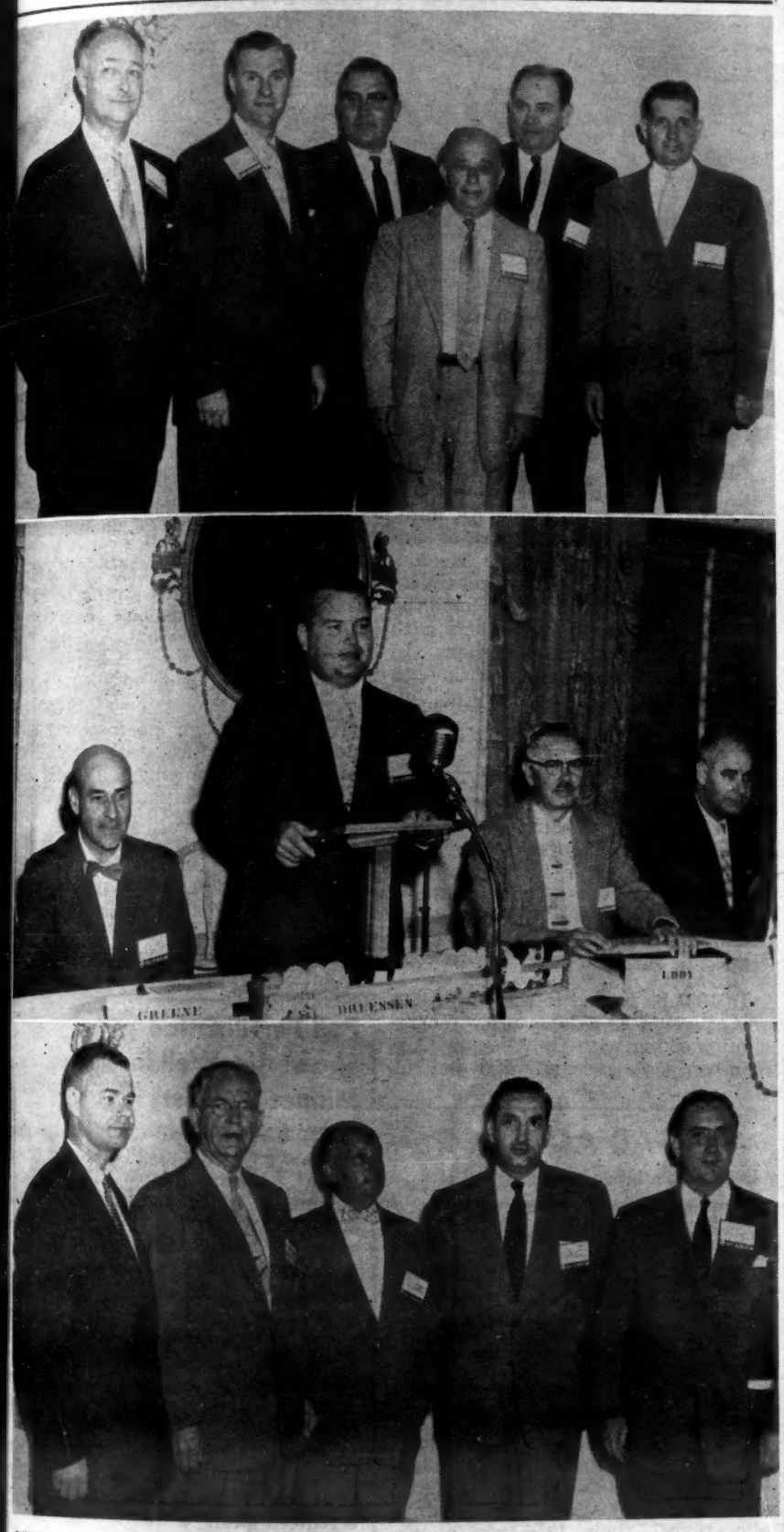
Rutgers Grassland Conference Scheduled

NEW BRUNSWICK, N.J.—"Flexibility in grassland farming" is the theme of the fourth annual Grassland Farming Conference to be held at the College of Agriculture, Rutgers University, on Oct. 30.

Dr. M. A. Sprague, chairman of the department of farm crops at Rutgers, said speakers will emphasize matching production to consumption. He is chairman of the New Jersey Grassland Committee, which is arranging the program.

Topics have been selected to interest both dairy farmers and livestock men, Dr. Sprague says. The morning session will begin at 10 o'clock.



AMONG NAC SPEAKERS—Three panel discussions were featured at the recent 23rd annual convention of the National Agricultural Chemical Assn. held Sept. 5-7 at the Essex and Sussex Hotel, Spring Lake, N.J. Pictured above are participants in three of these speaking groups. At the top is the panel which brought out many factors that influence farmers to accept and purchase new ideas and materials. Left to right, they are: Ellsworth Fisher, University of Wisconsin, representing the extension service; William A. Haffert, Jr., editor, "New Jersey Farm and Garden"; "Chief" Jones, operator of his own farm store at Muleshoe, Texas, representing agricultural chemical dealers; Montgomery Budd, Hercules Powder Co., Wilmington, Del., moderator of the panel; John McDonald, radio farm director of station WSM, Nashville, Tenn.; and Blanchard J. Smith, vice president, Chipman Chemical Co., Bound Brook, N.J.

In the center photo is the panel which focused attention on the market potential brought about by the widespread construction of super highways in the U.S. Left to right, are: William C. Greene, landscape engineer for the Connecticut State Highway Dept.; Dr. Jack Dreessen, herbicide specialist for NAC, moderator; Dr. C. O. Eddy, Niagara Chemical Division, chairman of the chemicals subcommittee for the American Road Builders' Assn.; and Raymond J. McMahon, president of McMahon Bros., Binghamton, N.Y. A fifth member of the group, H. F. Clemmer, coordinator of technical activities of the American Road Builders' Assn., was unable to be present at the meeting. His paper was presented by Dr. Dreessen.

In the third group are pictured participants in the panel on the Miller amendment to the Food and Drug Act. Left to right, they are Winton B. Rankin, FDA, Washington, D.C.; Dr. George C. Decker, entomologist, Illinois Natural History Survey, Urbana, Ill.; Lea S. Hitchner, NAC, moderator; Joseph A. Noone, technical adviser, NAC; and John Coyne, U.S. Department of Agriculture, Washington, D.C. (For a report of the convention see page 1 of the Sept. 10 and Sept. 17 issues of Croplife.)

Paul A. Anderson

Walter C. Smith

Appointments Announced To Croplife Production, Research, Sales Staff

MINNEAPOLIS—Appointments to the advertising sales, research and production departments of Croplife have been announced by Harvey E. Yantis, president of The Miller Publishing Co.

They are Paul A. Anderson, advertising sales representative; Walter C. Smith, research director; Walter O. Buchkosky, production superintendent, and Leland C. Hubert, new member of the advertising production department staff.

From September, 1954 to July, 1956 Mr. Anderson was business manager for American Feed & Grain and Hardware Age, publications of Bruce Publishing Co., St. Paul. Prior, he was advertising manager of the Marshall (Minn.) Messenger for four years. He is a native of Minneapolis, a veteran of three years with the 42nd army infantry division and a 1949 graduate of the University of Minnesota School of Journalism. He will make his headquarters at the Minneapolis home office of Croplife.

Mr. Smith joined The Miller Publishing Co. in July, 1954. He was assigned to the New York office as editorial assistant, a position he held until assuming his new responsibilities.

In 1954 he was graduated from the University of Connecticut and received a B.Sc. degree with high honors from the College of Agriculture. He also attended the University of Bridgeport, Conn., and the University of Florida at Gainesville.

Prior to attending college, Mr. Smith was with the General Electric Co., Bridgeport, Conn., for four years. He is a veteran of World War II, having served for three years with the 1266th Combat Engineers, and the 66th and 83rd Infantry Divisions in Europe.

For the past five years Mr. Buchkosky was associated with the H. M. Smyth Printing Co., St. Paul, for three years as production manager. He previously was for three years assistant superintendent at Shedd-Brown in Minneapolis and Eau Claire, Wis.

Mr. Hubert for four years was publications consultant with American Yearbook Co., at Owatonna, Minn. and Hannibal, Mo. Previously, he was advertising manager of C. M. Stendal, Inc., a Minneapolis retail shoe store. He is a journalism graduate of the University of Wisconsin, and his World War II service was with the Navy, including an assignment on Guam.

SANITATION SHORT COURSE

PORTLAND, ORE.—Third annual grain sanitation short course sponsored by the Pacific Northwest Grain Dealers Assn. will be held Oct. 25-26 announces Merril Sather, executive secretary. Scheduled for University of Idaho in the student union building, the event will be cooperatively presented by University of Idaho, Washington State college, and Oregon State college and is being cosponsored by the Pacific Northwest Crop Improvement Assn. and the Pacific Northwest Grain Dealers Assn.

SAFETY RECORD—For having piled up a safety record of more than nine years without a lost-time accident, some 50 employees of the Chatham, Ontario, fertilizer works of Canadian Industries Ltd. were feted recently at the William Pitt Hotel at Chatham. The achievement won for them the second successive C-I-L prize, highest award under the company's no-accident record plan. In photo above, Lorna Hands accepts an individual award from H. Greville Smith, right, president of C-I-L, for her contribution to the safety record. At left is V. B. Lillie, general manager of C-I-L's agricultural chemicals division.

INDUSTRY SAYS

(Continued from page 8)

August 30, and I certainly am not questioning your sincerity, that you believe practically all your ammonium nitrate finds an outlet as follows:

"'* * * * for use on crops not fertilized by farmers generally and crops whose production needs to be encouraged, or for use in demonstrations of recommended fertilization practices that have not come into general use.'

"It is on this point, primarily, that our views are at such widely divergent angles. Though I may be substantially in error, as you think I am, I am most sincere when I reaffirm that our observations and experiences in the field lead us to the inescapable conclusion most of your tonnage goes into direct competition with ammonium nitrate produced by such companies as ours. The policy you announce, if enforced, would bring about the results your organization claims for the program. Insofar as I can tell, your announced 'end use' policy has no enforcement provisions, thus no penalty for lack of compliance. Frankly, I don't think it can be enforced under your present system of distribution.

"In your letter you mention that in your opinion there is room for expanding the use of ammonium nitrate in certain areas. I am under the general impression you are making your product freely available in thirty-five states, with no restriction as to tonnage you are willing to ship into any of these states or into any area of a state. Am I wrong in my understanding on this point? In all deference to your expressed desire to help educate local fertilizer dealers, I can't see how your program contributes to that worthwhile goal. You have little, if any, field organization and, insofar as I know, you do not circularize dealers giving advice on correct fertilizer usage. The work of the land grant colleges deals with all forms of nitrogen and all makes of ammonium nitrate.

"If we could believe your tonnage is furthering the over-all interest of ammonium nitrate producers, as you tell us is your intention, I would be the first to pitch my hat high into the air and shout a hearty hallelujah! Substantial amounts of privately owned ammonia and ammonium nitrate capacity are standing idle because of a lack of market for nitrogen products. We are in trouble — serious trouble — and would not knowingly condemn help in furthering our interests. You tell us you are helping us; we hope you will forgive us for disagreeing most heartily.

"No good purpose will be served, I realize, by a continuing restatement of views, opinions and observations. The facts as to what happens out in the market place are what really count, and, in this case, the facts are admittedly not immediately at hand. Perhaps the only way the facts could be determined would be to have some reliable and independent organization go out into the field to make a general and comprehensive study of what is really happening and document the findings. If an impartial survey were to show I am wrong in my views, I would be the first to approach with my hat in my hand, and a very red face, and apologize genuinely for making a nuisance of myself. You know I want to be fair and objective in my opinions; furthermore, you know I am not a troublemaker.

"Two men of equal sincerity can hold different views, without either impeaching the motives of the other. As for me, I am not questioning the motives or the sincerity of you and your associates. I am firmly of the opinion, however, and I am sure you will forgive me for confessing my views, that the policies you declare are not being followed in most cases 'out on the firing line' in the merchandising of your product. Basically, we can see no need for a mass distributor-demonstration effort."

Canadian Meeting Expected to Draw Tradesmen From U.S.

NIARAGA FALLS, CANADA—The fourth annual meeting and conference of the Canadian Agricultural Chemicals Assn. has announced details of its program scheduled to be held at the Sheraton-Brock Hotel, October 16-18.

Following a business meeting the morning of the 16th, the afternoon program will feature a panel discussion on "agricultural extension," with A. H. Carter, Sherwin-Williams Co. of Canada, Ltd., as chairman.

Speakers appearing on this program will be S. R. N. Hodgins, director of information service, Department of Agriculture, Ottawa, Canada; J. A. Gardner, director of extension, Ontario Department of Agriculture, Toronto, Ont.; Dr. G. S. Cooper, North American Cyanamid Co.; and Dr. V. E. Graham, dean of the College of Agriculture, University of Saskatchewan.

D. K. Jackson, Monsanto Canada, Ltd., will address the group in a talk, "The Future Markets and Growth of Agricultural Chemicals in Canada," to complete the afternoon program.

The program of Oct. 17 will feature three talks in the morning session. Speakers are to include R. M. Campbell, vice president and joint managing director, J. Walter Thompson Co.; Dr. H. Martin, director, science service laboratory, Department of Agriculture, London, Ont.; and G. H. Wood, president and general manager, G. H. Wood & Co., Ltd.

A golf tournament will occupy much of the afternoon of the 17th, and a reception and banquet are scheduled for the evening. J. H. Gross, president, Canadian General Electric Co., Ltd., is banquet speaker.

The final day of the program will feature speakers discussing the use of agricultural chemicals. "How I Profited from the Use of Agricultural Chemicals" will be covered by W. C. Barrie, Galt, Ont.; and "Why I Don't Use More Agricultural Chemicals," will be handled by W. Newman, Pickering, Ont., and W. A. Thomson, Pense, Sask. G. Beaudin, Franklin Centre, Que. will tell of "Some Important Unsolved Problems for Agricultural Chemicals," and Dr. H. M. McLuhan, University of Toronto, will talk about "The Changeover from the Age of Production to the Age of Packaging."

Stanley Jones, president of the Winnipeg Grain Exchange, will be speaker at the luncheon on the 18th, to complete the meeting.

BIOCHEMIST HONORED

NEW HAVEN, CONN.—Hubert B. Vickery, head of the department of biochemistry at the Connecticut Agricultural Experiment Station, has been officially notified that he has received the Charles Reed Barnes life membership in the American Society of Plant Physiologists. The annual award made at the banquet of the society in Storrs on August 27, recognizes Dr. Vickery's outstanding contributions to knowledge of plant physiology and biochemistry, with particular reference to his studies of the organic acids in plants.

ASC APPOINTMENT

WASHINGTON — Ezra Taft Benson, secretary of agriculture, has announced the appointment of Gerald C. Randleman of Carlisle as a member of the Iowa State Agricultural Stabilization and Conservation Committee. Mr. Randleman has been farming since 1930 and now owns and operates farms in Warren County.

Jack Lomax

Velsicol Corp. Names New Western Entomologist

CHICAGO, ILL. — Velsicol Chemical Corp. has named Jack Lomax to its Western division staff. An entomologist, Mr. Lomax is working under the direction of George Weldon, manager of agricultural chemical sales on the West Coast, handling technical problems and contacts with colleges at experiment stations. In addition, Mr. Lomax will work with sales and technical personnel of Velsicol customers who handle chlordane, heptachlor and endrin insecticides.

The new appointee is a native Nebraskan, was graduated from the University of Nebraska in 1948 with a B.S. degree in Agriculture and Entomology. Following graduation, he joined the University of Nebraska staff as an extension specialist in entomology.

In 1951 he moved to the University of California as a laboratory technician, working with Dr. Glen E. Carmen, on scale research and control.

SUGAR ACREAGE

(Continued from page 1)

a national reserve, the entire acreage has been allocated to states. In computing the state allocations, the 1955-crop allocations (recomputed to give effect to final 1954 planted acreages) were used as bases, except for four states. For Nevada, which had no 1955-crop allocation, the 1956-crop allocation was used as a base. For Indiana, Michigan and Wisconsin—states in which the planted acreages for both the 1955 and 1956 crops were less than 90% of the effective allocations — their 1956-crop allocations were extended as allotments for the 1957 crop.

The limiting by means of proportionate shares of the acreage of sugar beets marketed for the extraction of sugar (not including sugar for livestock feed) is one of the conditions producers must meet to qualify for payments under the Sugar Act. Curtailment of the 1957 sugar beet crop is required because of the carryover of sugar from previous crops and an anticipated extended interest in sugar beet production.

Agricultural Stabilization and Conservation (ASC) state committees will establish individual farm proportionate shares from state allocations under standards and procedures generally similar to those effective for the 1955 and 1956 crops. One change permits the use of 1956-crop shares as basis for the 1957 crop, and another requires the setting aside for new producer shares a minimum of 2% of each state allocation instead of 1% as previously required.

TVA SAYS

(Continued from page 8)

increase his production per man-hou and per dollar investment. TVA's Fe tilizer Center at Muscle Shoals is th only institution of its kind in th country devoted to comprehensiv research to improve this tool and it uses. TVA's test-demonstration an distributor demonstration program are the only programs of their kin funneling the discoveries of th chemical and soil sciences from th laboratory to the practical farm These are functions fully contem plated by Congress in designatin TVA to operate the chemical facili ties at Muscle Shoals.

For the farmer, the need for stead improvement in farm efficiency i decognized as ever present and neces sary. For the Nation, the need for soi conservation and for improved pro ductive methods in the face of ou fast growing population is generall recognized. Your suggestion that th TVA laboratories and plants be sol would remove from the agricultura scene institutions which have suc ceeded in meeting these needs in hig degree while assisting the industr in the achievement of unprecedente markets.

Your statement that TVA educa tional programs are "little short o a farce and ridiculous sham" indi cates that you are unaware that fer tilizer distributors cooperating wit TVA, in fiscal year 1954 (the lates tabulated) reached over 250,000 in dividuals through meetings, exhibits field trips, etc.; assisted nearly 27,00 farmers in arranging soil tests; an issued publications circulating t more than 700,000 individuals.

TVA operations are open for publi inspection. Its officials are availabl for consultation. We would welcom a visit from you and your staff.

(Signed) Martin E. Weeks, Assist ant Director, Division of Agricultura Relations.

Fall Fertilization Shows Up Well in Minnesota Tests

ST. PAUL — Fall-fertilizing is jus as good as spring application for corn wheat, oats and hay, according to ex periments by J. M. MacGregor, soi scientist at the University of Minne sota.

Dr. MacGregor treated four silty clay loam fields of high fertility in south central Minnesota with 60 lb of actual ammonium nitrogen per acre in November, 1953. About three weeks before corn planting the next spring, nearby plots got the same treatment.

The corn yield differences between the fall-fertilized plots and the spring-fertilized plots gave the fall-fertilized plots a slight edge. How ever, the difference was less than 5%.

In 1955, Dr. MacGregor measured the nitrogen carry-over on the fol lowing oat crop and the fall-fertilized plots still held a 2% edge showing that there wasn't any loss of fertilizer over the first winter.

He conducted similar trials in 1951. Then the difference in yield between spring and fall applications was even less. Trials to show the difference be tween fall and spring applied ferti lizer on oats, wheat and hay in 1951 also showed no important difference.

Southern Weed Group Plans 1957 Conference

COLUMBIA, S.C.—The tenth an nual meeting of the Southern Weed Conference will be held at Augusta Ga., Jan. 23-25, 1957, conference presi dent Dr. W. B. Albert of the S.C Agricultural Experiment Station Clemson, has announced.

Dr. J. K. Leland of Dow Chemical Co., Midland, Mich., is chairman of the program committee which will announce a schedule of conference proceedings later.

FERTILIZER SALES IN 1957

(Continued from page 1)

wheat, corn, cotton, rice and tobacco but at the same time in most areas it is aimed at obtaining cross-compliance with acreage allotments and the soil bank program as a condition of eligibility for price support for those crops.

In the Pacific Northwest, this condition does not apply. In the two major Pacific Coast wheat states they are basically wheat-raising states with few substitutable crops. One major exception is barley. Consequently, USDA officials are not alarmed at any major threat to ignore the government programs by large wheat producers. Those growers constitute only a minor part of the wheat produced in those states. In Washington and Oregon, 60% of the wheat produced for market comes from wheat farms of 15 acres or less.

There is grave doubt that any mass retreats from the government controls are likely this year by the big growers since the soil bank has a wide open gap in the law which will permit the wheat growers of those states to have their cake and eat it too. In short, they can apply for acreage allotments, obtain price support and qualify for soil bank payments and at the same time also plant acreage taken out of wheat production under the Adjustment Act of 1938. That land may be planted in a secondary crop such as barley, and price support for that secondary crop can be obtained.

Here is the way this gimmick works: The Pacific Northwest wheat farmers have regularly followed a land fallow routine. It is now expected that for this first soil bank crop year, they may put their fallow wheat land into the acreage reserve program of the soil bank to qualify for payments under that program. Then they can make themselves eligible for wheat price support by reducing their normal non-fallowed land acreage allotment by the required amount, and then plant the land removed from the farm wheat allotment into a secondary crop. They can thus get under the price support umbrella for that crop.

Revelation of these possibilities seems to discount the possibility that there may be any wide-spread West Coast revolt against the wheat acreage allotment program.

However, either of these alternatives seems to insure that there will be a reasonably good market for plant food materials and pesticidal chemicals in that area for the 1957 wheat and other crops.

Other wheat growing sections, informed trade opinion highlighted by the analysis made before the fall meeting of the American Chemical Society at Atlantic City, by Russell Coleman, executive vice president of the National Plant Food Institute, can gain high profit plateaus through cooperation with the soil bank through a more adequate and intelligent use of plant foods and pesticidal chemicals.

In the cotton economy a highly regarded private estimate of the operations of the soil bank now discloses that for the irrigated Cotton Belt, almost full compliance with the soil bank acreage program is now seen. This condition develops since the current and probable next crop year payment of 7¢ a pound times acre yield in the soil bank is a more profitable venture after deducting the cost of deep well pumping of water and distribution on the cropland.

For the small half-bale, one-bale or bale-and-one-half cotton farms—those which do not lend themselves to mechanization—it is expected that there will be little if any soil bank cooperation according to this report. For the "family farm"—defined as a farm operated by a proprietor, his wife and children, where the production of the whole farm runs upwards of five bales with minimum mechanical facilities, there is also less likely to be any substantial measure of cooperation with the soil bank. For the larger "family farms" where there is adequate mechanization, there probably will be cooperation in the soil bank up to between 8-10% of the USDA goal.

On balance, this might indicate that the removal of acreage in the better developed land will encourage the producer to use fertilizer materials adequately and wisely as he plants cover crops on land removed from production.

Trade spokesmen told Croplife that in the acreage reserve program of the soil bank, where commitments are made for only one year, it seemed obvious that the farmer, committing his land to the soil bank from one of the eligible basic crops, would take great pains to insure that he got the maximum soil rebuilding value from such diversion. He would thus have a better soil the following year if he chose to resume field crop production.

That opinion from informed trade sources close to actual farm problems, indicated that this would mean that even on cover crops the prudent farmer would not neglect to fertilize those crops to get that maximum advantage.

The Corn Belt problem for the next crop is yet to be disclosed. It again is presumed that the soil bank rate of payment will not be reduced for the 1957 corn crop plantings. The experience with the soil bank in the acreage reserve program of the bank this year is no guide to what can happen in 1957. On the other hand, if the corn farmers will take advantage of advice given by Dr. Coleman in Atlantic City, they can successfully comply with soil bank requirements and come through with a profitable year in 1957 through a more adequate use of plant food, as such better use of those materials will reduce cost per unit of production.

The key to whole 1957 soil bank program will be the base period on which USDA soil bank officials will determine yields per acre. In the Pacific Northwest, wheat growers will get a relatively low yield base on acreage allotment penalties — a condition which encourages them to disregard all government programs since they can expand yields through proper fertilization. On the other hand, in the Corn Belt states for 1957, the maintenance of a per unit payment of 90¢ per bushel makes the soil bank for the acreage reserve program for corn look like a very attractive proposition.

It was noted at the outset that industry leaders contemplate a spread of between a 2% reduction in fertilizer tonnage and an increase of 5%, as a result of the operation and administration of the bank.

Under the worst possible results, the fertilizer industry tonnage could drop in 1957 by 2 to 3% under the soil bank. But the big cuts in acreage in crops which are now not using optimum levels of plant foods (in fact all of them except tobacco, which uses optimum amounts) can take the acreage cuts for soil bank coverage and decrease per unit costs through increased production and come out on top.

In this respect the soil bank may tend to point up the defects of the present farm programs and lead to a more intelligent and less political approach to farm problems. Perhaps under the soil bank, the plant food industry can aid the administration in reducing crop surpluses and at the same time show that farming can be made even more profitable under reduced acreage.

The note of encouragement of the trade assessment of the possibility of an even better year in 1957 under the soil bank, comes from its appraisal of the administration of the conservation reserve phase of the soil bank. It is now known that $250 million will be allotted to the 1957 conservation reserve program of the bank.

Trade sources say that if soil bank officials will take a liberal view of the use of this money—in other words, if these new funds are disbursed along the lines of the ACP programs, it will mean that an additional $60 million could be available to the fertilizer industry this coming year.

The conservation reserve program differs from the acreage reserve program of the bank since it covers long-term contracts. Unless the terms of the crop phase are generous in its use of the money available, so that the cooperating farmer is encouraged to plow back into his land some part of his money for a re-building of land, that part of the program may be a failure.

It is this part of the soil bank program which will make for the difference between lost tonnage for the plant food industry or the 5% increase which now can be seen through constructive administration of the bank this next year. There is however every reason to believe that under the supervision of the present director of the soil bank, Howard Doggett, there will be that type of long-range constructive development.

U.S. Sulfur Production For June Is Increased Over Figures for 1955

WASHINGTON, D.C.—The domestic sulfur industry produced 565,002 long tons of native sulfur and 37,600 tons of recovered sulfur (purity of 97% or greater) during June, according to reports of producers to the bureau of mines, U.S. Department of the Interior. This compares with 425,050 tons and 32,500 tons, respectively, produced in 1955.

The report indicated also that producers' stocks of native sulfur increased slightly over the previous month, and at the end of June, 1956, totaled some 3,330,433 tons.

Production of native sulfur produced by the Frasch method, for the first six months of 1956, were higher than that of the previous period of 1955. Production from January to June this year was 3,106,114 tons, whereas in 1955, the figure was 2,599,646 tons.

Shipments of sulfur in the same period, however, were down slightly from the same period of 1955. Shipments for January to June, 1956, were 2,941,637, as compared to 2,977,065 for the corresponding period last year.

The report was prepared by Annie L. Marks, under the supervision of G. W. Josephson, chief, branch of construction and chemical materials, Division of Minerals, U.S.D.I.

Dr. J. C. Miller to New Post at Texas A&M

COLLEGE STATION, TEXAS—Dr. J. C. Miller has been named dean of the School of Agriculture at Texas A&M College. He succeeds Dr. J. E. Adams, who recently resigned to become dean of agriculture, director of the Agricultural Experiment Station and director of the Agricultural Extension Service at the University of Nevada.

Dr. Miller was named dean by the board of directors of the Texas A&M College System during a meeting on the campus Sept. 22. He has been professor and head of the department of animal husbandry at A&M.

Tom H. Stewart

TULSA, OKLA.—The appointment of Tom H. Stewart as technical service manager for the Grand River Chemical Division of Deere & Co. has been announced by John R. Taylor, Jr., sales manager.

In his new duties, Mr. Stewart will render technical service to fertilizer manufacturers in connection with the company's line of nitrogen products including urea, urea solutions and ammonia.

Mr. Stewart has had wide experience in all phases of fertilizer manufacture and formulation. Previous to his recent appointment with Grand River Chemical, he was employed for many years by the International Minerals and Chemical Corp. fertilizer division. He holds his B.A. and M.S. degrees from Texas Tech in chemistry and chemical engineering.

C. V. Dick and A. B. Lemmon Named to New Positions In California Department

SACRAMENTO — California's director of agriculture W. C. Jacobsen has announced the appointment of Charles V. Dick as assistant director and Allen B. Lemmon as chief of the division of plant industry, the position formerly held by Mr. Dick.

The assistant directorship is a new position. Mr. Dick will be in charge of the department's legislative program and will serve as the director's liaison officer for the division of plant industry.

As the new chief of the division, Mr. Lemmon will direct and coordinate the bureaus of plant quarantine, entomology, plant pathology, rodent and weed control and seed inspection, field crops and chemistry. Mr. Lemmon has been chief of the bureau of chemistry since 1946.

A former Santa Cruz county agricultural commissioner, Mr. Dick became an administrative assistant in the department in July, 1945, and was appointed chief of the division of plant industry four years later. He has been in charge of the department's legislative activities since the appointment of Mr. Jacobsen as director in July, 1954.

Mr. Lemmon is a graduate of Stanford University. He entered departmental service in 1933 as an inspector of economic poisons and fertilizers in the bureau of chemistry. He also held the positions of senior inspector and district inspector before becoming chief.

Mr. Lemmon has been associated with the rapid development of pesticides and other chemicals during the postwar years and has served as president of the Association of American Fertilizer Control Officials and of the Association of American Pesticide Control Officials.

His duties will be assumed by his former assistant, Robert Rollins.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

MANY TOLERANCES SET, BUT . . .

Residue Questions Remain in Some Areas

Problems facing the pesticide industry in regard to residue tolerances are still rather numerous in some areas, it was pointed out at the recent meeting of the National Agricultural Chemicals Assn. by Dr. George C. Decker, entomologist for the Illinois Natural History Survey.

Some of these matters include the following: whether existing registered labels will be adhered to in 1957 in cases where no tolerance has been established for a pesticide; the problem of collecting data for residues on minor crops or limited uses where there is doubt that potential sales would justify the expense involved; the multiple tolerance situation in which different tolerance levels are established for the same pesticidal chemical on different crops; and the confusion resulting from a lack of information on interrelated meat, milk and forage residue tolerances.

Dr. Decker has indeed put his finger on some sensitive spots. These are problems that are widely recognized by many in the trade, particularly those who are directly concerned with trying to plan ahead in the face of uncertainties.

Far from criticizing the operation of the Miller amendment to the Food, Drug and Cosmetic Act which he credits with bringing about a much more positive approach to the residue problems of the industry, Dr. Decker merely outlined some of these unsolved problems which should occupy the attention of FDA in the immediate future.

"To assume that all of the many complex problems involved could be solved in a year or two would have been optimistic and unrealistic indeed," he said. It is not surprising, therefore, that a variety of minor and some major problems have yet to be resolved.

In general, he declared, the tolerances established in the 1950 hearings were more or less across the board for the fruits and vegetables considered, and these tolerances awarded many materials a considerable amount of latitude. This makes it possible to use and expand spray schedules without danger of exceeding tolerance limits, he said.

The case of DDT was cited as an example of across-the-board consideration. In this instance it was declared that "A tolerance for DDT of 7 parts per million on fruits and vegetables on which it is required will be without hazard to man." Thus this insecticide was given a tolerance of 7 ppm on about 50 fruits and vegetables with little or no apparent regard for data indicating required residue levels might be lower in the case of several crops.

In contrast to this, he said, many materials developed later were often tested under conditions of restricted usage where residues were held to unrealistically low levels. "As a result, they are now handicapped and have little or no flexibility in their use because they were awarded a tolerance based largely upon apparent residue requirements rather than safety. In many cases, the experiments reported were not designed to attain the best or in some cases, even adequate control of the pests involved," he declared.

These inequities were described by the Illinois entomologist as being "exceedingly embarrassing to research and extension workers," and difficult to explain to the farmer.

In view of this, he made the plea that where the margin of safety is adequate, serious consideration be given to the establishment of tolerances at levels that will allow for some flexibility in control practices to meet the variable contingencies that are inevitable.

In the area of establishing residue tolerances on meat, milk and forage crops, Dr. Decker warned that the farmer is in a position where he must stand by and accept sizeable losses that could be eliminated by the use of pesticides, or risk running afoul of the law. If indecision in this area continues, it was indicated, the situation will be aggravated even more.

In fact, Dr. Decker went so far as to predict that "unjustifiable prohibition of the use of insecticides has no more chance of protecting meat and milk than the Volstead Act had of enforcing temperance. Given no alternative, the farmer will tolerate continuing losses just so long, and then he will adopt some remedial measures. Without help and guidance, the steps thus taken may be the worst, not the best nor the safest," it was emphasized.

As things stand now, no one seems to be questioning the desirability of holding residues in milk to a minimum, but at the same time, it is becoming increasingly evident that the maintenance of a zero tolerance for all pesticides is impractical and that the promulgation of safe tolerances for at least a few materials will encourage the use of greater discretion in the choice of pesticides where dairy animals are involved.

How residues on forage crops should be regarded is also a knotty problem, since much of these crops never leave the farms on which they are produced. Label warnings such as "Do not feed to dairy animals or animals being finished for slaughter" are helpful, but are still not as efficient as they would be if official tolerances were established for meat and milk.

These problems are not insurmountable. They will doubtless be solved eventually, but it does appear that the sooner progress can be made in these fields, the better it will be for all concerned.

The pesticide trade has shown a good spirit of cooperation with the FDA in assembling data and setting tolerances, and it does not wish to become over-anxious and impatient about the smoothing out of rough places. At the same time, we think it is good for all to be brought up to date on the current situation and Dr. Decker has done a fine job of doing just that.

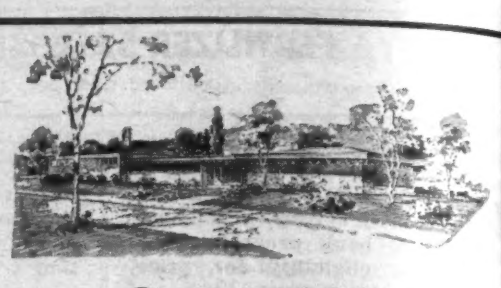
Small-Farm Ideology

Boston Federal Reserve Bank economists have pointed out some of the difficulties of fitting a short-run policy of relieving low-income farmers with the long-range objective of creating a more efficient agriculture. They observe that the long-range policy, with its focus on increasing efficiency, tends momentarily to accentuate the plight of the low-income farmer.

Political tear-jerking over this problem appears to rest on a rather widespread assumption that the family living on the farm represents one of the most desirable groups in our democratic society. The political solution deriving from this conception thus patly materializes in such socialistic proposals as deliberately supplementing the small-farm family income through some form of subsidization from public funds.

But at this point a redefinition is suggested by the economists. They simplify the problem by defining the family farm not as one merely small in acreage, but as a farm which one family is capable of managing. Small farmers with little land, they point out, are unable to compete effec-

(Continued on page 23)



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EXECUTIVE AND EDITORIAL OFFICES — 2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER, THE AMERICAN BAKER, FEEDSTUFFS, MILLING PRODUCTION

MEETING MEMOS

Oct. 8-10 — Carolinas-Virginia Pesticide Formulators Assn., Inc., Annual Meeting, Holly Inn, Pinehurst, N.C., W. R. Peele, 516 S. Salisbury St., Raleigh, Secretary-Treasurer.

Oct. 9—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, 28, Cal., Executive Secretary.

Oct. 15 — Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

Oct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

Oct. 16-18—Fertilizer Industry Round Table, Shoreham Hotel, Washington, D.C. Vincent Sauchelli, Chief Agronomist, Davison Chemical Co., Div. W. R. Grace Co., Baltimore 3, Md., chairman.

Oct. 16-18—Canadian Agricultural Chemicals Assn., Fourth Annual Meeting and Conference, Sheraton-Brock Hotel, Niagara Falls, Ontario.

Oct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

Oct. 22-23—Fertilizer Section, National Safety Council, La Salle Hotel, Chicago, Ill.; Curtis A. Cox, Virginia-Carolina Chemical Corp., Richmond, Va., chairman.

Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Oct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.

Nov. 2—Southern Soil Fertility Conference, Atlanta-Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.

Nov. 7-9 — Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.

Nov. 11-13 — California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 13-15—18th Annual New York State Insecticide and Fungicide Conference and 9th Annual Pesticide Application Equipment Conference, Bibbins Hall, Cornell University, Ithaca, N.Y.

Nov. 19-20 — Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 19-20—Ohio Pesticide Institute winter meeting, Neal House, Columbus, Ohio.

Nov. 27-28—Indiana Fertilizer Conference, Memorial Union, Purdue University, Lafayette, Ind.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 6-7—Alabama Soil Fertility Society, Whitley Hotel, Montgomery, Ala.

Dec. 10-12—13th Annual North Central Weed Control Conference, Sherman Hotel, Chicago.

Dec. 13-14—Soil Fertility and Plant Nutrition Short Course, University of Missouri, Columbia, Mo.

Dec. 13-14—Cotton Production Conference, The Titwiler, Birmingham, Ala.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

1957

Jan. 23-25 — Southern Weed Conference, Bon Aire Hotel, Augusta, Ga.; Walter K. Porter, Jr., Agricultural Experiment Station, Louisiana State University, Baton Rouge, secretary.

Jan. 28-29—National Cotton Council of America, Annual Meeting, St. Louis, Mo.

Jan. 31-Feb. 1-2 — Agricultural Aircraft Assn., Annual Convention, Senator Hotel, Sacramento, Cal., Wanda Branstetter, Route 3, Box 1077, Sacramento, Executive Secretary.

June 26-28 — Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

WORLD REPORT

(Continued from page 18)

sulfate of ammonia in 1960-61, against the estimated consumption of only 600,000 tons in 1955-56, the government has issued instructions to all state governments to undertake a use-more-fertilizer campaign at once.

Leading the campaign is Dr. Punjabrao Deshmukh, minister of agriculture. During the second five-year plan, now in operation, the irrigated area of cultivated land will be increased to 90 million acres, which at the moderate rate of 100 lb. per acre would require 3 million tons of sulfate of ammonia. However, the government decided to be modest in its requirement and set the figure of 1.8 million tons as the minimum. This, with 75,000 tons of superphosphate, should do the job, he says.

Dr. Deshmukh has criticized the failure of farmers to use enough phosphatic fertilizers. In other countries, he asserts, more phosphatic fertilizers are used than nitrogenous, whereas the proportion used in India in 1955 was estimated at 55,000 tons of nitrogenous to 1,000 tons phosphatic. The position, he states, is detrimental to the soil of the country because the main crops of rice, wheat and sugar cane respond more appreciably and readily to the application of nitrogen and phosphoric acid.

Government Aid

The government is helping the Indian farmer financially. Superphosphate is subsidized to the extent of 25% of its price — consideration is being given to increasing this proportion. More efficient distribution of fertilizers is being arranged and credit terms are to be liberal. Free demonstrations are being organized in the villages and propaganda is being stepped up.

Chilean Shipments

Shipments of Chilean nitrate of soda in the 12 months ended June 30, 1956, totaled 1,344,000 tons, compared with 1,487,000 tons shipped in the previous 12 months, trade sources report.

Egyptian Production

The Egyptian government is increasing its efforts to improve crop production, a situation accented by the troubled middle eastern situation. Production of phosphate rock increased from 534,690 metric tons in 1954 to 646,679 last year. Nitrate of lime production jumped from 159,000 tons to 190,000 tons. Giving cause for concern, however, is the slowdown in superphosphate production. This dipped from 1954's 150,443 tons to 147,051 tons last year.

Irrigated Sesame Crop Looks Normal

SEMINOLE, TEXAS — Reports from various parts of Texas indicate irrigated sesame crop this year will be the best one yet produced. Sesame has been grown commercially only two or three years, but is already looming as an important crop of the future.

The price is about the same as last year, which was 9¢ lb. for seed, according to Robert L. Parker, executive vice president of the Texas Sesame Seed Growers.

Sesame is now being tried in other sections of the south with one promising area being in the Mississippi Delta area. Several plantings were also made in Oklahoma. Dryland sesame on the South Plains made only from a fourth to half as much as in 1955, due to the hot, dry summer.

MCA WINS AWARD

NEW YORK — The Manufacturing Chemists' Assn., Inc., has won a 1956 American Society of Association Executives "Outstanding Activities" award for the safety program it conducts on behalf of the chemical industry. The safety program, in effect 11 years, consists of publication of safety data sheets, collection and dissemination of safety statistics, presentation of annual awards to chemical companies with best safety records, publication of accident case histories, and cooperation with other groups interested in industrial safety.

EDITORIAL

(Continued from page 22)

tively with larger, well-equipped farms. Furthermore, families living under substandard conditions can contribute little to a democratic society. Thus, it is concluded, the real issue is not whether, at public expense, we should attempt to keep small farmers on their land or, by withholding special largesse, tend to drive them off their land, but rather it is a question of what opportunities we should provide to help them make their own proper choice for their future. We can, say these economists, develop either their skills as farmers or their abilities for other available occupations. In either case the aim of sustaining their relationship to the democratic ideal is subserved, and political unrest is eased, by putting full responsibility on the farmers themselves, so that the role of public agencies can be, as it should be, only the provision of opportunity.

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